

MONDAY, 6/16/2025

11-01: Combustor Heat Transfer

6/16/2025

8:00 AM to 10:00 AM - LL6

Chair: **Ting Wang - University of New Orleans**

Chair: **Cosimo Bianchini -**

Chair: **Carlo Carcaschi - University of Florence**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl Sangan - University of Bath**

Chair: **Sean Bradshaw - Pratt & Whitney**

Presentations:

Numerical Analysis of Radiative Heat Transfer Within a Rich-Burn, Quick-Mix, Lean-Burn Combustor, {GT2025-151901}

Technical Paper Publication

Nicolas Tricard - Massachusetts Institute of Technology

Andressa Johnson - Pratt & Whitney

Nicolas Meister - University of Connecticut

Alex Hemchand - University of Connecticut

Xinyu Zhao - University of Connecticut

Thermo-Structural Design of an Air-Cooled Rotating Detonation Combustor for Gas Turbine Integration, {GT2025-151891}

Technical Paper Publication

Andrea Ruan - Purdue University

Sergio Grasa - Purdue University

Rohan Gejji - Purdue University

John Grunenwald - North Carolina State University

Carson Slabaugh - Purdue University

Guillermo Paniagua - Purdue University

A Novel Approach to Dirt Mitigation for Combustor Walls, {GT2025-154071}

Technical Paper Publication

Kyle McFerran - The Steady Thermal Aero Research Turbine (START) Lab

Karen Thole - Pennsylvania State University

Stephen Lynch - Pennsylvania State University

Gregory Boardman - Pratt & Whitney

Ryan Lundgreen - Pratt & Whitney

Stephen Kramer - Pratt & Whitney

Dibesh Joshi - Pratt & Whitney

CPU-GPU Performance Comparison in Large Eddy Simulations of a Combustor Liner With Rapid Octree Meshing, {GT2025-153658}

Technical Paper Publication

Ashwini Dalvi - Ansys India Ltd

Anil Wakale - Ansys India Pvt Ltd

Patrick Sharkey - Ansys UK Ltd

Yu Xia - Ansys UK Ltd

Florian Menter - Ansys Germany GmbH

David Flad - Ansys Germany GmbH

Andreas Hueppe - Ansys Germany GmbH

32-02 Turbine Tip Flows

6/16/2025

8:00 AM to 10:00 AM - LL2

Chair: **Paul Vitt - GE Aerospace**

Chair: **John Clark - USAF**

Presentations:

Reducing Low-Pressure Turbine Shroud Leakage Loss by Optimizing Leakage-Mainstream Interaction, {GT2025-151479}

Technical Paper Publication

Josué-Inocente Camarero Pueyo - Institut für Turbomaschinen und Fluid-Dynamik

Eike Helmsen - Institut für Turbomaschinen und Fluid-Dynamik

Marcel Oettinger - MTU Aero Engines AG

Stefan Klingl - MTU Aero Engines AG

Haris Junghans - MTU Aero Engines AG

Kacper Palkus - MTU Aero Engines Polska

Lars Wein - Institut für Turbomaschinen und Fluid-Dynamik

Experimental Assessment of Tip Loss Variation in LPT Blades With Tip Height, Squealer Geometry, and Coolant Flow Rate, {GT2025-153738}

Technical Paper Publication

Daniele Petronio - Università degli Studi di Genova - DIME

Virginia Bologna - University of Genova

Daniele Simoni - University of Genova

Monica Gily - Avio Aero

Numerical and Experimental Analysis of the Tip Leakage Flow in a Squealer LPT Blade for Different Operating Conditions, {GT2025-153789}

Technical Paper Publication

Daniele Petronio - Università degli Studi di Genova - DIME

Matteo Dellacasagrande - University of Genova

Davide Lengani - University of Genova

Luca De Vincentiis - Morfo Design

Gabriele Cattoli - Morfo Design

Simone Paccati - Morfo Design

Filippo Rubechini - Morfo Design

Monica Gily - Avio Aero

Andrea Notaristefano - Avio Aero

31-02 Compressor Design

6/16/2025

8:00 AM to 10:00 AM - LL1

Chair: **Lisa Brilliant - Pratt & Whitney**

Chair: **Daniel Wilkin II - GE Aerospace**

Chair: **masa shimo - Honeywell**

Chair: **Michael Joly - Raytheon Technologies Research Center**

Presentations:

Aerodynamic Design and CFD Assessments of a Hydrogen Multistage Axial Compressor, {GT2025-153406}

Technical Paper Publication

Arvind Prabhakar - Siemens DISW

The Local Aerodynamic Effect due to Miss-Staggering in Variable Stator Vanes, {GT2025-151438}

Technical Paper Publication

*Martin Lange - TU Dresden
Christoph Jasmund - TU Dresden
Matěj Fiedler - TU Dresden
Robin Schmidt - Rolls-Royce Deutschland Ltd&Co KG
Ronald Mailach - TU Dresden*

Efficient ML-Based Prediction of Turbomachinery Blade Performance With B-Spline Surface Representation, {GT2025-152689}

Technical Paper Publication

*Hamun R. Bertram - Brandenburg University of Applied Sciences
Christian Janke - Rolls-Royce Germany
Robert Flassig - Brandenburg University of Applied Sciences
Peter Flassig - Brandenburg University of Applied Sciences*

Analytical Study on the Influence of Stage-Wise Distribution of Parameters on the Performance of a Multi-Stage Axial Compressor, {GT2025-152143}

Technical Paper Publication

*Oleh Dehtiarov - SoftInWay Switzerland GmbH
Vlad Goldenberg - SoftInWay, Inc.
Ievgen Rublevskyi - SoftInWay UK Ltd.
Leonid Moroz - SoftInWay, Inc*

12-01: Additive Manufacturing in Film Cooling

6/16/2025

8:00 AM to 10:00 AM - LL7

Chair: **Lamyaa El-Gabry -**

Chair: **Ardeshir Riahi -**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl Sangan - University of Bath**

Chair: **Alexander Wildgoose - GE Aerospace**

Chair: **Ali Ameri -**

Presentations:

Assessment of Additive Manufacturing Repeatability Through Adiabatic Effectiveness Measurements, {GT2025-152942}

Technical Paper Publication

*Niccolo' Castelli - University of Florence
Alessio Picchi - University of Florence
Bruno Facchini - University of Florence
Lorenzo Winchler - Baker Hughes
Francesco Morante - Baker Hughes*

The Influence of In-Hole Roughness on Leading Edge Overall Effectiveness, {GT2025-153014}

Technical Paper Publication

*Bailey Hopkins - Air Force Institute of Technology
James L. Rutledge - Air Force Institute of Technology*

Design and Fabrication of a Thermally Optimized Gas Turbine Nozzle, {GT2025-153314}

Technical Paper Publication

*Elise Flachs - University of Texas at Austin
David Bogard - University of Texas at Austin*

Performance and Evaluation of a Thermally Optimized Gas Turbine Nozzle, {GT2025-153337}

Technical Paper Publication

Elise Flachs - University of Texas at Austin

34-02 High-fidelity CFD – compressors and pumps

6/16/2025

8:00 AM to 10:00 AM - LL4

Chair: **Jeff Defoe** -

Chair: **Maysaa Rizk** -

Chair: **Jeremy Nickol** -

Presentations:

Wall-Resolved iLES of Compressor Tandem-Blades Using High-Order DG Method, {GT2025-151633}
Technical Paper Publication

Andrea Rocca - Cenaero

Michel Rasquin - Cenaero

Koen Hillewaert - Cenaero/University of Liège

Anis Al Rifai - Safran Aeroboosters

Thomas Toulorge - Cenaero

Reynolds Number Effect on Transitional Delayed Detached-Eddy Simulation, {GT2025-152640}
Technical Paper Publication

Felix Moeller - Institute of Test and Simulation for Gas Turbines, German Aerospace Center (DLR)

Michael Bergmann - Institute of Propulsion Technology, German Aerospace Center (DLR)

Christian Morsbach - Institute of Propulsion Technology, German Aerospace Center (DLR)

Paul G. Tucker - Department of Engineering, University of Cambridge

Zhong-Nan Wang - College of Engineering and Physical Sciences, University of Birmingham

Alexander Hergt - Institute of Propulsion Technology, German Aerospace Center (DLR)

Florian Herbst - Institute of Propulsion Technology, German Aerospace Center (DLR)

Comparison of Zonal and Wall-Resolved Large Eddy Simulations for an Axial Compressor Rotor, {GT2025-152003}
Technical Paper Publication

Marc Julian Rodekamp - Technische Universität Dresden, Chair of Turbomachinery and Flight Propulsion

Moritz Kreuseler - Technische Universität Dresden, Chair of Fluid Mechanics

Björn Koppe - Technische Universität Dresden

Martin Lange - Technische Universität Dresden

Jochen Fröhlich - Technische Universität Dresden

Ronald Mailach - Technische Universität Dresden

Axial-Flow Pump/Intake Fluid Dynamic Interactions: Numerical Predictions of Outboard Dynamic-Inlet Waterjets Operating Under Inlet Distortion, {GT2025-152873}

Technical Paper Publication

Filippo Avanzi - Università degli Studi di Padova

Francesco De Vanna - Università degli Studi di Padova

Andrea Magrini - Università degli Studi di Padova

Ernesto Benini - Università degli Studi di Padova

04-05 High hydrogen I

6/16/2025

8:00 AM to 10:00 AM - 110

Chair: **Samir Rida** -

Chair: **David Noble** - EPRI

Chair: **Lance Smith** - Pratt & Whitney

Chair: **Sreenath Gupta - ANL**

Presentations:

Investigation of Combustion Characteristics of Hydrogen Lifted Flames in a Small Hydrogen Combustion Chamber, {GT2025-151113}

Technical Paper Publication

A.K.M. Nazrul Islam - Tokyo Metropolitan University

Kazunori Ichieda - Tokyo Metropolitan University

Takashi Sakurai - Tokyo Metropolitan University

Surface Roughness Effects on the Operability and Performance of a Hydrogen Jet Burner, {GT2025-151389}

Technical Paper Publication

Robin Vivoli - Cardiff University

Daniel Pugh - Cardiff University

Burak Goktepe - Cardiff University

Sally Hewlett - Cardiff University

Anthony Giles - Cardiff University

Richard Marsh - Cardiff University

Steven Morris - Cardiff University

Philip Bowen - Cardiff University

Investigation of Dual-Flame-Front Stabilization in Partially Premixed Hydrogen Flames Using Synchronized PIV/OH-PLIF, {GT2025-151618}

Technical Paper Publication

Maxime Leroy - EM2C /Safran Tech

Clément Mirat - Laboratoire EM2C

Antoine Renaud - Laboratoire EM2C

Stefano Puggelli - Safran Tech

Ronan Vicquelin - Laboratoire EM2C

Investigation of Critical Operating Conditions for Hydrogen Flames Under Typical Gas Turbine Conditions, {GT2025-152427}

Technical Paper Publication

Holger Ax - German Aerospace Center (DLR)

Oliver Lammel - German Aerospace Center (DLR)

Rainer Lückcrath - German Aerospace Center (DLR)

Joshua Gray - German Aerospace Center (DLR)

Benjamin Witzel - Siemens Energy

Lutz Blätte - Siemens Energy

Berthold Köstlin - Siemens Energy

04-20 Atomization and Spray Combustion I

6/16/2025

8:00 AM to 10:00 AM - 109 A/B

Chair: **Samir Rida -**

Chair: **David Noble - EPRI**

Chair: **Vince McDonnell - University of California - Irvine**

Chair: **Angela Kimber Ehlich - Woodward**

Presentations:

Development and Assessment of Dual-Fuel Capabilities in Next-Generation Aero-Engine Injectors for Hydrogen and Liquid Fuels, {GT2025-152443}

Technical Paper Publication

Sofya Buro - Technical University of Darmstadt

Ruud Eggels - Rolls-Royce Deutschland Ltd & Co KG

Hendrik Nicolai - Technical University of Darmstadt
Christian Hasse - Technical University of Darmstadt

Impact of Change in Atomization on Lean Blow Out for Sustainable Aviation Fuels in Gas Turbine Combustors, {GT2025-152463}

Technical Paper Publication

Debolina Dasgupta - Argonne National Laboratory
Sibendu Som - Argonne National Laboratory

Numerical Study and Validation of the Near-Nozzle Spray Behavior of a Non-Proprietary Pressure-Swirl Atomizer for Aviation Applications, {GT2025-152948}

Technical Paper Publication

Austin Han - Argonne National Laboratory
Ashwini Karmarkar - Argonne National Laboratory
Brandon Sforzo - Argonne National Laboratory
Christopher Powell - Argonne National Laboratory
Lorenzo Nocivelli - Argonne National Laboratory

Laser Sheet Dropsizing of Ethanol Jets in Supersonic Crossflows With Far Field Oblique Shocks, {GT2025-152997}

Technical Paper Publication

Ignacio Lasala - Purdue University
Aubrey Mckelvy - Amentum Space Exploration Group
Eric Bach - Purdue University
Guillermo Paniagua - School of Mechanical Engineering, Purdue University
Etienne Choquet - MBDA
Thierry Andre - MBDA

27-05: Stability in Rotordynamics

6/16/2025

8:00 AM to 10:00 AM - 106

Chair: **Filippo Cangioli - Waukesha Bearings**

Chair: **Liang Tian - Waukesha Bearings**

Chair: **Lorenzo Naldi - Baker Hughes**

Presentations:

Computational Terms to Be Considered in the Investigation of Whirl-Flutter Phenomenon in Installed Propeller Aeroengine Systems, {GT2025-153582}

Technical Paper Publication

Francesco D'alessandro - SAFRAN AIRCRAFT ENGINES
Florian Garnier - SAFRAN AIRCRAFT ENGINES
Damien Guivarch - SAFRAN AIRCRAFT ENGINES
Weize Kang - GE Aerospace
Amit Zutshi - GE Aerospace
Sandeep Agarwal - GE Aerospace
Devesh Kumar - Boeing
Donald Powell - Boeing
Mark Robinson - HEXAGON
Ted Rose - HEXAGON

Research on the Mechanism of Vibration Response Difference of Turbine Frame, {GT2025-153847}

Technical Paper Publication

Fangming Liu - Beihang University
Jie Hong - Beihang University
Yanhong Ma - Beihang University

04-25 Combustion Dynamics - Hydrogen Flames I

6/16/2025

8:00 AM to 10:00 AM - 108

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Marc Furi - Siemens Energy**

Chair: **Caleb Cross -**

Presentations:

Design of a Rich-Burn Hydrogen Micromix Injector for Investigating Entropy Waves, {GT2025-152010}

Technical Paper Publication

Angel Brito Gadeschi - Technical University of Munich, Germany; TUM School of Engineering and Design, Department of Aerospace and Geodesy, Assistant Professorship of Sustainable Future Mobility

Thuy An Do - Technical University of Munich, Germany; TUM School of Engineering and Design, Department of Aerospace and Geodesy, Assistant Professorship of Sustainable Future Mobility

Agnes Jocher - Technical University of Munich, Germany; TUM School of Engineering and Design, Department of Aerospace and Geodesy, Assistant Professorship of Sustainable Future Mobility

An Extended Artificially Thickened Flame Model for Turbulent Hydrogen and Hydrogen-Enriched Flames With Intrinsic Instabilities Under Gas Turbine Relevant Conditions, {GT2025-152452}

Technical Paper Publication

Vinzenz Schuh - Technical University Darmstadt

Driss Kaddar - Technical University Darmstadt

Antonia Bähr - Technical University Darmstadt

Mathis Bode - Forschungszentrum Jülich GmbH

Christian Hasse - Technical University Darmstadt

Hendrik Nicolai - Technical University Darmstadt

Thermoacoustic Instabilities in Hydrogen-Methane Combustion: Analysis of Self-Excited Flame Dynamics in a Lab-Scale Cyclone Burner, {GT2025-152971}

Technical Paper Publication

Berksu Erkal - University of Twente

Jim Kok - University of Twente

23-01 Externally Pressurized Bearings

6/16/2025

8:00 AM to 10:00 AM - 107 A/B

Chair: **Ali Shakil -**

Chair: **Jurg Schiffmann -**

Chair: **Alexander Nelson -**

Presentations:

Hybrid Fluid Film Bearing Supported Electric Pumps for Liquid Rocket Engines: Rotor-Bearing System Design and Rotordynamic Simulator Testing, {GT2025-152156}

Technical Paper Publication

Howon Yi - Hanyang University

Keun Ryu - Hanyang University

On the Dynamic Response of a Cryogenic Hybrid Journal Bearing due to Pneumatic Hammer, {GT2025-152345}

Technical Paper Publication

Kyuman Kim - Hanyang University

Keun Ryu - Hanyang University

Evaluation of Static and Dynamic Performance of Externally Pressurized Gas-Lubricated Journal Bearings Using Static, Impact, and Imbalance Loads, {GT2025-152815}

Technical Paper Publication

Anthony Dudlo - Texas A&M University

Wonbae Jung - Texas A&M University

Adolfo Delgado - Texas A&M University

Sang-Guk Kang - DEVCOM Army Research Laboratory

Chol-Bum M. Kweon - DEVCOM Army Research Laboratory

The Role of Recess Configuration and Working Fluid in Hybrid Bearing Performance, {GT2025-153936}

Technical Paper Publication

Hyunsung Jung - Hanyang University

Keun Ryu - Hanyang University

21-02: Wet Steam

6/16/2025

8:00 AM to 10:00 AM - LL8

Chair: **Sebastian Schuster - Duisburg University**

Chair: **Markus Schatz - Helmut Schmidt University Hamburg**

Chair: **Vince Mcdonell - University of California - Irvine**

Presentations:

Wet-Steam Flow Simulation With Coarse Water Droplets Through a Turbine Cascade Based on Eulerian-Eulerian Method, {GT2025-151602}

Technical Paper Publication

Takashi Furusawa - Tohoku University

Kazushi Morikita - Tohoku University

Hironori Miyazawa - Tohoku University

Satoru Yamamoto - Tohoku University

Yasuhiro Sasao - Mitsubishi Heavy Industries, Ltd.

Satoshi Miyake - Mitsubishi Heavy Industries, Ltd.

Soichiro Tabata - Mitsubishi Heavy Industries, Ltd.

Suppression of Coarse Droplet Formation From Gas-Sheared Liquid Sheets by Controlling the Trailing Edge Shape and Wettability, {GT2025-152178}

Technical Paper Publication

Yoshiaki Kamada - Kyushu University

Keito Murakami - Kyushu University

Zhenying Wang - Kyushu University

Chihiro Inoue - Kyushu University

Shigeki Senoo - Mitsubishi Heavy industries, Ltd.

Modelling of Water Film and Secondary Droplet Formation in a Steam Turbine, {GT2025-153115}

Technical Paper Publication

Guk Chol Jun - Czech technical university in Prague

Michal Kolovratnik - Czech technical university in Prague

Vaclav Petr - Czech technical university in Prague

Michal Hoznedl - Doosan Skoda Power

Jakub Vlasak - Doosan Skoda Power

Investigation of Liquid Film Atomization From the Trailing Edge of an Airfoil in a High-Speed Flow- Effect of Trailing Edge Thickness, {GT2025-153354}

Technical Paper Publication

Safiullah Safiullah - University of California Irvine
Vince Mcdonell - University of California Irvine
Soichiro Tabata - Mitsubishi Heavy Industries
Shigeki Senoo - Mitsubishi Heavy Industries

01-09 Modelling, Simulation and Validation I

6/16/2025

8:00 AM to 10:00 AM - 111

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**

Chair: **Curtis Vedder - Honeywell**

Chair: **Matthew Dunn - Honeywell**

Chair: **Parthiv Shah - ATA Engineering**

Presentations:

Ceramic Composite Materials Investigated for Suitability in Dynamic Sealing Conditions, {GT2025-154080}

Technical Paper Publication

Erin Volpe - Technetics Group
Shannon Depratter - Technetics Group
Carolyn Grimley - Lucideon
Becca Jones - Technetics Group
Elaine Motyka - Technetics Group
Ryan Plessinger - Technetics Group
Stefan Roeseler - Technetics Group
Tyler Noyes - Technetics Group
Jonathan Kweder - Technetics Group

Analysis and Comparison of Hydrodynamic Features in Ltoff Seals, {GT2025-151886}

Technical Paper Publication

Stefan Roeseler - Technetics Group
Aaron Glafenhein - Technetics
Todd Adams - Technetics
Miguel Rodriguez - Technetics
Justin Baldauff - Technetics
Ryan Plessinger - Technetics
Erin Volpe - Technetics
Elaine Motyka - Technetics
Tyler Noyes - Technetics
Becca Jones - Technetics
Shannon Depratter - Technetics
Jonathan Kweder - Technetics

Methods for High-Speed Jet Exhaust Aero-Vibro-Acoustic Modeling in Engine Test Cells, {GT2025-154047}

Technical Paper Publication

Parthiv Shah - ATA Engineering, Inc.
Michael Yang - ATA Engineering, Inc.
Derek Berg - ATA Engineering, Inc.
Stephen Hambric - Hambric Acoustics, LLC
Darryl Douglas - NAWCAD/Air Systems Group/Propulsion & Power
David Mayo, Jr. - NAWCAD/Air Systems Group/Propulsion & Power
John Spyropoulos - NAWCAD/Air Systems Group/Propulsion & Power
Ryan Denton - RS&H

A Ground-Based Test Facility for Turboprop/Turboshaft Engine Development in Hanwha Aerospace, {GT2025-151828}

Technical Paper Publication

Sungmo Yang - Hanwha Aerospace
Taehun Lee - Hanwha Aerospace

Hyuncheol Koo - Hanwha Aerospace
Doohwan Yu - Hanwha Aerospace
Youngju Chun - Hanwha Aerospace
Seongkook Kim - Hanwha Aerospace

06-02 Pressure Gain Combustion

6/16/2025

8:00 AM to 10:00 AM - 112

Chair: **Ioannis Roumeliotis - Cranfield University**
Chair: **Ward De Paepe - UMONS**
Chair: **Alessandro Sorce - Università degli Studi di Genova**
Chair: **Simone Salvadori - Politecnico di Torino**
Chair: **Eric Bach - Purdue University**
Chair: **James Braun - North Carolina State University**
Chair: **Majid Asli - Brandenburg University of Technology**
Presentations:

A Novel Design Methodology for Compact Turbine Stages Operating Downstream of Rotating Detonation Engines, {GT2025-153042}

Technical Paper Publication

Davide Visconti - von Karman Institute for Fluid Dynamics

Bayindir H. Saracoglu - von Karman Institute for Fluid Dynamics

A Comprehensive Thermodynamic Performance Analysis of Gas Turbine Combined Cycles With Rotating Detonation Combustion, {GT2025-153639}

Technical Paper Publication

Abhishek Dubey - University of Genova

Gokkul Raj Varatharajulu Purgunan - Technical University of Berlin (TUB)

Myles D. Bohon - Technical University of Berlin (TUB)

Panagiotis Stathopoulos - German Aerospace Center (DLR)

Alessandro Sorce - University of Genova

Large-Eddy Simulation of Traversing Jet Re-Ignition in a Wave-Rotor Constant-Volume Combustor, {GT2025-154259}

Technical Paper Publication

Rasheed Yinusa - Purdue University

M. Razi Nalim - Purdue University

Efficiency Enhancement in Pressure Gain Combustion Combined Cycle Gas Turbine by Blade Cooling Integration With Bottoming Cycle, {GT2025-153615}

Technical Paper Publication

Abhishek Dubey - University of Genova

Alessandro Sorce - University of Genova

Massardo Aristide Fausto - University of Genova

03-03 Advanced Numerical Simulations and Emission Analysis in Gas Turbines' Combustion Systems

6/16/2025

8:00 AM to 10:00 AM - 105

Chair: **Marcel Otto -**
Chair: **Angela Serra - Baker Hughes**
Chair: **Luca Lombardozzi -**

Presentations:

Pin Fin Effects in an Ammonia Reactor for Hydrogen Production Applied to a Carbon-Free Turbofan, {GT2025-152817}

Technical Paper Publication

Andrew Menendez - University of Central Florida
Benjamin Turner - University of Central Florida
Saqib Shahzad - University of Central Florida
Erik Fernandez - University of Central Florida
Marcel Otto - University of Central Florida
Jayanta Kapat - University of Central Florida
Stefano Orsino - Ansys inc

The Role of Part-Load Control Strategies in Optimizing the Efficiency of a Decarbonized Combined Cycle Power Plant in Load-Following Mode, {GT2025-152904}

Technical Paper Publication

Silvia Ravelli - University of Bergamo

Numerical Prediction of Flame Lift Off and NO Emissions for Hydrogen Air Flames, {GT2025-152963}

Technical Paper Publication

Kiran Manoharan - Honeywell
Vishwas Verma - Honeywell
Tanvi Kaushik - Honeywell
Akhila K S - Honeywell
Jaydeep Basani - Honeywell
Thomas Bronson - Honeywell Aerospace

NOx Emission Measurement and Numerical Validation for Cracked Ammonia Combustion in a Semi Industrial Burner Design, {GT2025-153573}

Technical Paper Publication

Luca Mazzotta - Sapienza University of Rome
Roberto Meloni - Baker Hughes
Rachele Lamioni - University of Pisa
Naseem Ansari - Ansys, Inc.
Stefano Orsino - Ansys, Inc.
Steven Morris - Cardiff University
Burak Goktepe - Cardiff University
Syed Mashruk - Cardiff University
Domenico Borello - Sapienza University of Rome
Agustin Valera-Medina - Cardiff University

13-01: Heat transfer in turbines engine testing

6/16/2025

1:30 PM to 3:30 PM - LL7

Chair: **Matthew Bloxham -**

Chair: **Silvia Ravelli -**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl Sangan - University of Bath**

Chair: **Jeffrey Bons - The Ohio State University**

Chair: **Curtis Stimpson - Solar Turbines**

Presentations:

Infrared Heat Transfer Coefficient Measurements in an Engine-Scaled Turbine Stage, {GT2025-151270}

Technical Paper Publication

William Davis - University of Cambridge

William Playford - University of Cambridge
Aurélien Perrot - University of Cambridge
Max Hewkin-Greggor - University of Cambridge
Julien Desset - Von Karman Institute for Fluid Dynamics
Tony Arts - Von Karman Institute for Fluid Dynamics
Nicholas R. Atkins - University of Cambridge

Heat Transfer Measurements in a Turbine Centre Frame at Realistic Mach Number – Part 1: Baseline Study, {GT2025-153178}

Technical Paper Publication

Patrick René Jagerhofer - Institute for Thermal Turbomachinery and Machine Dynamics, Graz University of Technology
Ena Badžek - Institute for Thermal Turbomachinery and Machine Dynamics, Graz University of Technology
Petar Bulović - Institute for Thermal Turbomachinery and Machine Dynamics, Graz University of Technology
Marios Patinios - GE Aerospace, Advanced Aviation Technology
Emil Göttlich - Institute for Thermal Turbomachinery and Machine Dynamics, Graz University of Technology

Heat Transfer Measurements in a Turbine Centre Frame at Realistic Mach Number – Part 2: Influence of Combustor Hot Streaks, {GT2025-153262}

Technical Paper Publication

Ena Badžek - Institute for Thermal Turbomachinery and Machine Dynamics, Graz University of Technology
Patrick René Jagerhofer - Institute for Thermal Turbomachinery and Machine Dynamics, Graz University of Technology
Petar Bulović - Institute for Thermal Turbomachinery and Machine Dynamics, Graz University of Technology
Marios Patinios - GE Aerospace, Advanced Aviation Technology
Emil Göttlich - Institute for Thermal Turbomachinery and Machine Dynamics, Graz University of Technology

Utilising Thermal History Coatings for the Assessment of Hydrogen Fuel on Combustor Temperatures, {GT2025-152181}

Technical Paper Publication

Silvia Araguas Rodriguez - Sensor Coating Systems
Thijs Bouten - Destinus Energy
Elmira Parsa - Sensor Coating Systems
Ilora Ishaque - Sensor Coating Systems
Carl Parsons - Sensor Coating Systems
Goran Krsic - Sensor Coating Systems
Joseph Counte - Sensor Coating Systems
Lars-Uno Axelsson - Destinus Energy
Solon Karagiannopoulos - Sensor Coating Systems
Jörg Feist - Sensor Coating Systems

31-07 Compressor Stability and Loss Mechanisms

6/16/2025

1:30 PM to 3:30 PM - LL1

Chair: **Lisa Brilliant - Pratt & Whitney**

Chair: **Daniel Wilkin II - GE Aerospace**

Chair: **Giridhar Jothiprasad -**

Chair: **Shakeel Nasir -**

Presentations:

A Unified Framework for Compressor Stall Inception, {GT2025-153215}

Technical Paper Publication

Sam Grimshaw - Whittle Laboratory, University of Cambridge
Graham Pullan - Whittle Laboratory, University of Cambridge
Edward Greitzer - Department of Aeronautics and Astronautics, Massachusetts Institute of Technology
Zoltan Spakovszky - Department of Aeronautics and Astronautics, Massachusetts Institute of Technology

Improving Compressor Preliminary Design With Physically Decomposed Loss Models, {GT2025-151289}

Technical Paper Publication

Alistair C Senior - Whittle Laboratory, University of Cambridge

Robert J Miller - Whittle Laboratory, University of Cambridge

A Multiscale Representation of Turbulence Generation in Compressor Flows, {GT2025-154144}

Technical Paper Publication

Matteo Dellacasagrande - University of Genoa

Pawel Przytarski - University of Genoa

Effect of Profile Shape and Cascade Solidity, Inlet Mach Number and Incidence Angle on the Performance of a Subsonic Compressor Blade Cascade, {GT2025-151830}

Technical Paper Publication

Jaewoo Choi - Doosan Enerbility

David šImurda - Institute of Thermomechanics of the Czech Academy of Sciences

Tomáš Radnic - Institute of Thermomechanics of the Czech Academy of Sciences

Jindřich Hála - Institute of Thermomechanics of the Czech Academy of Sciences

Jaewook Song - Doosan Enerbility

14-01: Compressor Rotating Cavity

6/16/2025

1:30 PM to 3:30 PM - LL6

Chair: **Giovanna Barigozzi - Università degli Studi di Bergamo**

Chair: **Hui Tang - University of Bath**

Chair: **Michael D. Barringer - Penn State**

Chair: **Carl M. Sangan -**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Peter Childs -**

Presentations:

Experimental Investigation of Mass Flow Exchange Ratio and Core Swirl Ratio in a Novel Dual-Cavity Test Rig With Heated Rotating Compressor Cavities, {GT2025-151141}

Technical Paper Publication

Kristian Kinne - Technical University Dresden

Stefan Odenbach - Technical University Dresden

Wieland Uffrecht - Technical University Dresden

Numerical Investigation of Ekman Layer Transition in Rotating Flows, {GT2025-152476}

Technical Paper Publication

Hyder Abedi - University of Surrey

Diogo Pitz - Universidade Federal do Paraná

Olaf Marxen - University of Surrey

John Chew - University of Surrey

The Influence of Axial Throughflow Swirl on Buoyancy-Induced Flow in a Compressor Cavity, {GT2025-152677}

Technical Paper Publication

Sebastian Syncerz - University of Bath

Tom Nicholas - University of Bath

Gary Lock - University of Bath

Hui Tang - University of Bath

James Scobie - University of Bath

Fundamental Model for Compressor Cavity Heat Transfer: Theory and Validation, {GT2025-152729}

Technical Paper Publication

Tom Nicholas - University of Bath
Mikolaj Pernak - University of Bath
Gary Lock - University of Bath
James Scobie - University of Bath
Hui Tang - University of Bath

04-08 Combustion Modeling I

6/16/2025

1:30 PM to 3:30 PM - 108

Chair: **Samir Rida -**

Chair: **David Noble - EPRI**

Chair: **Antonio Andreini - University of Florence**

Chair: **R V Manikantachari Kancherla - Cadence**

Presentations:

GPU Accelerated Large Eddy Simulations of Combustion Instabilities in Industrial Gas Turbines Under EGR Conditions, {GT2025-151173}

Technical Paper Publication

Islam Kabil - Argonne National Laboratory
Chao Xu - Argonne National Laboratory
Lee Shunn - Cadence Design Systems
Jonathan Wang - Cadence Design Systems
Yonduck Sung - Solar Turbines Incorporated
Daniel Johnson - Solar Turbines Incorporated
Chris Steele - Solar Turbines Incorporated

The Influence of Turbulence Intensity on NOx Emission and Flame Topology in Ammonia/Air Premixed Combustion, {GT2025-151303}

Technical Paper Publication

Inyeong Gu - Korea Advanced Institute of Science & Technology (KAIST)
Dong-Hyuk Shin - Korea Advanced Institute of Science & Technology (KAIST)

Large Eddy Simulation of the PRECCINSTA Combustor Using a Native GPU Solver, {GT2025-151529}

Technical Paper Publication

Yu Xia - Ansys UK Ltd.
Ashwini Dalvi - Ansys Software Pvt. Ltd.
Florian Menter - Ansys Germany GmbH
David Flad - Ansys Germany GmbH
Andreas Hueppe - Ansys Germany GmbH

LES of Hydrogen-Fuelled Combustion in the First Stage of the Ansaldo Energia GT36 Constant Pressure Sequential Combustion System, {GT2025-152020}

Technical Paper Publication

Aldo Schioppa - CERFACS
Luis Tay-Wo-Chong - Ansaldo Energia Switzerland AG
Andrea Ciani - Ansaldo Energia Switzerland AG
Laurent Gicquel - CERFACS

04-13 Combustor Design I

6/16/2025

1:30 PM to 3:30 PM - 110

Chair: **Samir Rida** -

Chair: **David Noble** - **EPRI**

Chair: **Andrea Ciani** - **Ansaldo Energia**

Chair: **Rohit Khattar** - **Siemens Energy**

Presentations:

Hydrogen Micro-Mix Fuel Injection: Design & Evaluation, {GT2025-151582}

Technical Paper Publication

Mark Brend - Loughborough University

Yanling Li - Rolls-Royce Plc

Murthy Ravikanti - Rolls-Royce Plc

Design by Large-Eddy Simulations of a Rich Burn – Quick Mix – Lean Burn Lab-Scale Combustion Chamber Operating in High-Pressure Conditions, {GT2025-151634}

Technical Paper Publication

Afaf Karrouk - CORIA - CNRS UMR 6614

Benjamin Quevreux - CORIA - CNRS UMR 6614

Clément Brunet - SAFRAN HELICOPTER ENGINES

Stéphane Richard - SAFRAN HELICOPTER ENGINES

Gilles Cabot - CORIA - CNRS UMR 6614

Frédéric Grisch - CORIA - CNRS UMR 6614

Effect of Exhaust Gas Recirculation on Combustion Efficiency in a Swirl-Stabilized Flame With Blends of Natural Gas and Hydrogen, {GT2025-152799}

Technical Paper Publication

Javier Rodriguez Camacho - Pennsylvania State University

Christopher Birkbeck - Pennsylvania State University

Min Kyeong Yoon - University of South Carolina

Ana Victoria Kok - University of South Carolina

Sang Hee Won - University of South Carolina

Jacqueline O'Connor - Pennsylvania State University

Characterization of a Fluidically-Variable Swirl Burner: Effects of the Imprinted Swirl on Flame Shapes and Emissions for Hydrogen-Methane Blends, {GT2025-152856}

Technical Paper Publication

Mattias E. G. Eck - Technische Universität Berlin

Philipp Zur Nedden - Technische Universität Berlin

Jakob G. R. Von Saldern - Technische Universität Berlin

Alessandro Orchini - Technische Universität Berlin

C. Oliver Paschereit - Technische Universität Berlin

24-01: Emerging Methods in Engine Design and Life Assessment

6/16/2025

1:30 PM to 3:30 PM - 106

Chair: **Dipankar Dua** -

Chair: **Bernd Beirow** - **Brandenburg University of Technology**

Chair: **Ibrahim A. Sever** - **Rolls Royce**

Chair: **Dino Celli** - **US AFRL**

Chair: **Sachin Shinde** - **Blue Origin**

Presentations:

Sparse Identification of Nonlinear Dynamics (SINDy) for Digital Twinning and Performance Modeling in Hybrid Engines, {GT2025-153121}

Technical Paper Publication

Ali Aghazadeh Ardebili - HSPI SpA - Roma

Adem Khalil - Istanbul Gelişim University

Sabri Khalil - Istanbul Gelişim University

Elio Padoano - University of Trieste

Antonio Ficarella - Green Engine Lab, Dipartimento di Ingegneria dell'Innovazione, University of Salento

Towards a Cyber-Physical Production System With Digital Workpiece Twin for Automated Turbine Blade Repair, {GT2025-154132}

Technical Paper Publication

Berend Denkena - Institute of Production Engineering and Machine Tools, Leibniz University, Hannover, Germany

Hans-Henrik Westermann - MTU Maintenance Hannover GmbH

Sven Friebe - MTU Aero Engines AG

Long-Term Lifetime Validation of Hot Turbine Guide Vanes Manufactured by Laser Powder Bed Fusion, {GT2025-152300}

Technical Paper Publication

Ilya Fedorov - Siemens Energy AB

Martin Lindbaeck - Siemens Energy AB

Jan Muenzer - Siemens Energy AG

Oleg Naryzhnyy - Siemens Energy AB

10-01 Fan Aerodynamic Design

6/16/2025

1:30 PM to 3:30 PM - LL8

Chair: **Zhiping Wang - Morrison Products, Inc.**

Chair: **Till M. Biedermann -**

Chair: **Gregory Wagner - Morrison Products, Inc.**

Presentations:

Effects of Blade Solidity and Aspect Ratio on a 0.5 Hub-to-Tip Ratio Tube-Axial Fan, {GT2025-154241}

Technical Paper Publication

Massimo Masi - University of Padova

Piero Danieli - University of Padova

Effects of Ribbed Blades on the Aerodynamic Performance of a Controlled Vortex Design Tube-Axial Fan, {GT2025-153714}

Technical Paper Publication

Lorenzo Tieghi - University of Trento

Piero Danieli - University of Padova

Lorenzo Battisti - University of Trento

Massimo Masi - University of Padova

Effects of Backward-Forward Blade Skew on the Performance of an Axial Flow Fan Designed for Automotive Applications, {GT2025-151471}

Technical Paper Publication

Mattia Piovan - University of Ferrara

Nicola Aldi - University of Ferrara

Michele Pinelli - University of Ferrara

Alessio Suman - University of Ferrara

Nicola Zanini - University of Ferrara

Enrico Mollica - SPAL Automotive Srl

Assessment of a New 0.2 Hub-to-Tip Ratio Propeller Fan Design With Rigid-Body Blade Loading, {GT2025-154208}

Technical Paper Publication
Massimo Masi - University of Padova
Piero Danieli - University of Padova

36-01 Preliminary Design and Structural Optimisation

6/16/2025

1:30 PM to 3:30 PM - LL3

Chair: **Marcus Meyer** -

Chair: **Robert Flassig** - **TH Brandenburg**

Chair: **Peter Flassig** - **TU Brandenburg**

Presentations:

Pre-Design and Analysis of a Military Hybrid High-Pressure Turbine, {GT2025-151307}

Technical Paper Publication

Francisco Carvalho - DLR e.V.

Patrick Wehrel - DLR e.V.

Tomasz Matuschek - German Aerospace Center (DLR)

Robin Schöffler - DLR e.V.

Robin G. Brakmann - DLR e.V.

Thomas Behrendt - DLR e.V.

Paul-Benjamin Ebel - DLR e.V.

Uwe Schulz - DLR e.V.

Florian Herbst - DLR e.V.

Multimodal Rotor-Dynamic Optimization Based on Transfer Matrix Method for Different Rotor Structures, {GT2025-152092}

Technical Paper Publication

Hüseyin Tarık Niş - TUSAS Engine Industries Inc.

Ahmet Furkan Özden - TUSAS Engine Industries

Ömer Faruk Kale - TUSAS Engine Industries

Ahmet Yıldız - Bursa Uludağ University

Enhancing Blade Durability to Foreign Object Damage Through Multidisciplinary Design Optimization, {GT2025-151707}

Technical Paper Publication

Simona Rocchi - Technical University of Munich

Adam Kosco - MTU Aero Engines AG

Volker Gümmer - Technical University of Munich

Optimisation Applications of Quantum Computing in the Energy Business, {GT2025-152715}

Technical Paper Publication

Nigel Gwilliam - Siemens Energy

Matthew Lang - Siemens Energy

Bryan Drossman - Siemens Energy

Muhammad Ahmad - Siemens Energy

Pranathi Konda - Siemens Energy

Klaus Verdnik - Siemens-Energy

Rory Macdonald - Siemens Energy

Shankar Srinivansan - Siemens Energy

Michael Hofstetter - Siemens Energy

03-01 Advanced Combustion Dynamics and Emission Control in Ammonia and Hydrogen Systems

6/16/2025

1:30 PM to 3:30 PM - 105

Chair: **Domenico Borello - Università di Roma La Sapienza**

Chair: **Angela Serra - Baker Hughes**

Chair: **David Zamora - UCF**

Presentations:

The Effects of Secondary Air Staging Location, Pressure and Humidification on NO_x Emissions for a High Ammonia Blend in Premixed Swirl Combustion, {GT2025-151612}

Technical Paper Publication

Sally Hewlett - Cardiff University

Daniel Pugh - Cardiff University

Agustin Valera-Medina - Cardiff University

Burak Goktepe - Cardiff University

Jon Runyon - Cardiff University

Anthony Giles - Cardiff University

Steve Morris - Cardiff University

Techno-Economic Assessment of an Ammonia-Based Gas Turbine, {GT2025-153819}

Technical Paper Publication

Daria Bellotti - Polytechnic School, University of Genoa

Chiara Monacchini - Polytechnic School, University of Genoa

Chiara Anfosso - Polytechnic School, University of Genoa

Christian Romano - Baker Hughes

Egidio Pucci - Baker Hughes

Loredana Magistri - Polytechnic School, University of Genoa

Laminar Burning Speed Measurements of Ammonia-Hydrogen Mixtures at Elevated Pressures for Gas-Turbine Applications, {GT2025-155047}

Technical Paper Publication

Louis Yovino - UCF

Ahmed Safdari - UCF

Gihun Kim - UCF

Ramees Khaleel Rahman - UCF

Subith Vasu - UCF

Robert Steele - EPRI

Mark Winquist - GTI Energy

Ganesan Subbaraman - GTI Energy

John Vega - GTI Energy

37-01 Radial Turbomachinery Experimental

6/16/2025

1:30 PM to 3:30 PM - LL2

Chair: **Bob Mischo - MAN Energy Solutions**

Chair: **Friedrich Froehlig - Rolls Royce**

Chair: **Matthew Meier - Penn State University**

Presentations:

The Experimental Study on the Aerodynamic Performance Improvement Using Retrofitted Augmented Diffusers in Centrifugal Stage, {GT2025-153022}

Technical Paper Publication

Yuanjie Wu - Trane Technologies

Chris Thilges - Trane Technologies

Detailed Experimental and Numerical Investigation of a Transonic Impeller With a Vaned Diffuser, {GT2025-154076}

Technical Paper Publication

Erinc Erdem - TUSAS ENGINE INDUSTRIES (TEI)
Ozan Alican - TUSAS ENGINE INDUSTRIES
Gülsevim Sepetci Kutmaral - TUSAS ENGINE INDUSTRIES (TEI)
Seyfullah Cay - TUSAS ENGINE INDUSTRIES (TEI)
Bora Yazgan - TUSAS ENGINE INDUSTRIES (TEI)
Ahmet Arslan - TUSAS ENGINE INDUSTRIES (TEI)

Numerical Simulation and Validation of As-Manufactured NASA High-Efficiency Centrifugal Compressor Using Fully Coupled FSI Approach, {GT2025-153737}

Technical Paper Publication

Qingyuan Zhuang - Siemens Industry Software
Thorsten Hansen - ISimQ GmbH
Erik Munktehl - Siemens Industry Software
Georg Scheuerer - ISimQ GmbH
Kim Zwiener - Siemens Industry Software

01-08 Propellers and Open Rotors I

6/16/2025

1:30 PM to 3:30 PM - 111

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**

Chair: **Curtis Vedder - Honeywell**

Chair: **Kenneth Van Treuren - Baylor University**

Chair: **Maximilian Mennicken - German Aerospace Center (DLR)**

Presentations:

Effects of Leading-Edge, Suction-Surface Roughness on Propeller Performance for Unmanned Aircraft Applications, {GT2025-151911}

Technical Paper Publication

Austin Rouser - Oklahoma State University
Kurt Rouser - Oklahoma State University
Nathan Wisniewski - Oklahoma State University
Joshua Melvin - Oklahoma State University
Ryan Paul - Oklahoma State University

Development of a Wind Tunnel Dynamometer Assembly for Evaluating Unmanned Aircraft Co-Axial Propeller Performance, {GT2025-151812}

Technical Paper Publication

Samin Yaser Ahmed - Oklahoma State University
David Coleman - Texas A&M University
Tasfia Kamal - University of Maryland
Nathan Wisniewski - Oklahoma State University
Kurt Rouser - Oklahoma State University
Atanu Halder - Oklahoma State University

Far Field Acoustic Comparisons of Commercial and Custom Propeller Mounted on a Boom With and Without a Motor Containment Box, {GT2025-153414}

Technical Paper Publication

Charles Wisniewski - USAF Academy
Kenneth Van Treuren - Baylor University
Devin O'dowd - USAF Academy

Evaluation of Propeller Self-Aspirated Flow Controls to Suppress Boundary Layer Separation at Low Reynolds Number, {GT2025-153984}

Technical Paper Publication

Dawson Manning - Oklahoma State University
Andrew Bellcock - Oklahoma State University
Kurt Rouser - Oklahoma State University
Ryan Paul - Oklahoma State University

33-01 Deposition, erosion and fouling in gas turbine engines

6/16/2025

1:30 PM to 3:30 PM - LL4

Chair: **Michele Pinelli - University of Ferrara**

Presentations:

CFD Assessment of the Magnus Effect and Collision Induced Rotation of Solid Particulate on Compressors, {GT2025-151423}

Technical Paper Publication

Cairen Miranda - Virginia Tech
John Palmore - University of Washington
Changmin Son - Virginia Tech

Particle/blade Impact Study of Near-Transonic Compressor in Engine Test, {GT2025-154066}

Technical Paper Publication

Boone Estes - Virginia Tech Advanced Propulsion and Power Lab
Paige Brockway - Virginia Tech Transport Phenomena Lab
Leonardo Olivera - Virginia Tech Advanced Propulsion and Power Lab
David Bunin - Virginia Tech Petrology Lab
Rui Qiao - Virginia Tech Transport Phenomena Lab
Wing Ng - Virginia Tech Advanced Propulsion and Power Lab
Mark Caddick - Virginia Tech Petrology Lab
Changmin Son - Virginia Tech Advanced Propulsion and Power Lab
Todd Lowe - Virginia Tech Advanced Propulsion and Power Lab
Gwibo Byun - Virginia Tech Advanced Propulsion and Power Lab
Rory Clarkson - Rolls-Royce
Jessica Cummings - Rolls-Royce
Chong Cha - Rolls-Royce
Jim Loebig - Rolls-Royce
Charlie Haldeman - Pratt & Whitney
Andy Consiglio - Pratt & Whitney

Impact of Shift in Frequency of Online Water Washes on Corrected Isentropic Efficiency of Compressor of Heavy-Duty Gas Turbine, {GT2025-152186}

Technical Paper Publication

Muhammad Adnan Saroosh - ACWA POWER
Muhammad Azhar Janjua - ACWA Power
Yahya Zafar Iqbal - Acwa Power
Jalal Hunain Zia - ACWA Power
Mathew York - ACWA Power

Numerical Study of Ice Accretion on Fan Blades: Implications for the Design of Blade Geometries, {GT2025-152704}

Technical Paper Publication

Katja Mueller - Brandenburg University of Applied Sciences
Klaus Markgraf - Brandenburg University of Applied Sciences
Andreas Vogel - Rolls-Royce Deutschland Ltd & Co KG
Peter Flassig - Brandenburg University of Applied Sciences
Robert Flassig - Brandenburg University of Applied Sciences

05-03: GT Health Monitoring & Prediction

6/16/2025

1:30 PM to 3:30 PM - LL10

Chair: **Joshua Adams** -

Chair: **Lubomir Ribarov** - *U.S. Merchant Marine Academy*

Chair: **Yiguang Li** -

Presentations:

Comparison of Real-Time Multivariate Dynamic Modeling Methods of Gas Turbine, {GT2025-151548}
Technical Paper Publication

Hoang Nguyen Huy - Viettel Aerospace Institute

Tung Vu Xuan - Viettel Aerospace Institute

Dung Pham Ngoc - Viettel Aerospace Institute

Vu Hoang Nhu - Viettel Aerospace Institute

Khoa Nguyen Quang - Viettel Aerospace Institute

Lanh Chu Duy - Viettel Aerospace Institute

Minh Nguyen Phi - Viettel Aerospace Institute

Adaptive Kalman Filter by Reinforcement Learning for Monitoring Aircraft Engines' Performance Against Abrupt Events, {GT2025-151946}

Technical Paper Publication

Raphaël Schirru - Safran Tech, Safran Group

Dong Quan Vu - Safran Tech, Safran Group

Sebastien Razakarivony - Safran Tech, Safran Group

Solène Thépaut - Safran Tech, Safran Group

Alfred Bauny - Safran Aircraft Engine

Data-Driven Modeling Method for Vibration of Rotating Machinery Under Complex Loads and Variable Conditions, {GT2025-153471}

Technical Paper Publication

Qi Yan - Beihang University

Yanhong Ma - Beihang University

Zhefu Yang - Beihang University

Ronghui Cheng - AECC Shenyang Engine Design and Research Institute, Aero Engine (Group) Corporation of China

Jing Tian - AECC Shenyang Engine Design and Research Institute, Aero Engine (Group) Corporation of China

Yu Liu - AECC Shenyang Engine Design and Research Institute, Aero Engine (Group) Corporation of China

Jie Hong - Beihang university

A Systematic Method of Sensor Selection for Gas Turbine Performance Degradation Estimation, {GT2025-152920}

Technical Paper Publication

Jiasen Xu - Tsinghua University

Fangyuan Lou - Tsinghua University

30-02 Cycles

6/16/2025

1:30 PM to 3:30 PM - LL5

Chair: **Timothy Allison** - *Southwest Research Institute*

Chair: **Timothy Held** - *Echogen*

Chair: **Ty Neises** - *National Renewable Energy Laboratory*

Presentations:

Multi-Objective Technoeconomic Optimisation of Closed Loop CO₂ Power Cycle for Spherical Tokamak Fusion Reactor, {GT2025-152393}

Technical Paper Publication

Dhinesh Thanganadar - UK Atomic Energy Authority

Jacob Connors - UK Atomic Energy Authority

Jack Acres - UK Atomic Energy Authority

Numerical Optimization of an Alkali-Metal Heat Pipe for Use in sCO₂ Power Generation, {GT2025-154186}

Technical Paper Publication

Elena Torres - CATER | University of Central Florida

Abhilash M. Prasad - University Of Central Florida

Marcel Otto - University of Central Florida

Erik Fernandez - University of Central Florida

Zachariah Koyn - Energy Driven Technologies, LLC

Jayanta Kapat - University of Central Florida

Unconstrained Optimisation of Combined Gas Turbine & Supercritical Carbon Dioxide Cycles for Off-Shore Applications, {GT2025-153074}

Technical Paper Publication

Leonard Muke - University of Seville

Amgad Khamis - University of Seville

Adonis Constantinidis - University of Seville

Francesco Crespi - University of Seville

David Sánchez - University of Seville

20-04: Optimization Through Digital Tools

6/16/2025

1:30 PM to 3:30 PM - 114

Chair: **Jason Wilkes - Southwest Research Institute**

Chair: **Nicola Zanini -**

Presentations:

Maximization of Thermal Development Through Improvement of Heat Recovery Steam Generator Integrated Availability for Heavy Oil Field – an Application of Lean Approach, {GT2025-151671}

Technical Paper Publication

Mohamed Al-Fazari - Petroleum Development Oman LLC

Gas Turbine Diagnostics by Means of Convolutional Neural Networks Fed With Time Series Data Encoded As Images, {GT2025-151808}

Technical Paper Publication

Enzo Losi - Università degli Studi di Ferrara

Mauro Venturini - Università degli Studi di Ferrara

Lucrezia Manservigi - Università degli Studi di Ferrara

Giovanni Bechini - Siemens Energy

Data-Driven Based Digital Twin Leak Detection for Hydrogen Networks for the Gas Turbines' Applications, {GT2025-153126}

Technical Paper Publication

Elham Ebrahimi - University of Salento

Antonio Ficarella - University of Salento

A Multistage Centrifugal Pump Design Process for Cryogenic Fluids, {GT2025-153763}

Technical Paper Publication

Nicola Aldi - DE – Department of Engineering, University of Ferrara

Michele Pinelli - DE – Department of Engineering, University of Ferrara

Mattia Piovan - DE – Department of Engineering, University of Ferrara
Alessio Suman - DE – Department of Engineering, University of Ferrara
Nicola Zanini - DE – Department of Engineering, University of Ferrara

15-01: Internal Cooling Design Optimization

6/16/2025

4:00 PM to 5:30 PM - LL7

Chair: **Riccardo Da Soghe -**

Chair: **Wontae Hwang -**

Chair: **Alessio Picchi -**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl Sangan - University of Bath**

Chair: **Pradip Xavier - CORIA**

Presentations:

Thermal Performance, Frictional Characteristics, and Energy Efficiency of Integrating Helical Diverters in Two-Pass Rotating Gas Turbine Blade Cooling Channels, {GT2025-151383}

Technical Paper Publication

Areej Khalil - University of Wisconsin-Milwaukee

Mohamed Abousabae - University of Wisconsin-Milwaukee

Ryo Amano - University of Wisconsin-Milwaukee

Mayyadah Abuhasheh - University of Wisconsin-Milwaukee

Heat Transfer Enhancement in Variable Aspect Ratio Serpentine Passages With Hemispherical Dimples, {GT2025-152214}

Technical Paper Publication

Hanlin Wang - Texas A&M University

Lesley Wright - Texas A&M University

Fluidic Oscillators in Impingement Jet Cooling: a Novel Configuration for Realizing Sweeping Jets, {GT2025-152415}

Technical Paper Publication

Robin G. Brakmann - DLR

Francisco Carvalho - DLR

Marcel Matha - DLR

Christian Morsbach - DLR

Camille Pain - DLR

Julien Pellé - LAMIH UMR CNRS 8201 - Département Mécanique

Emilie Rairoux - DLR

Michael Schroll - DLR

Erik Techen - DLR

Christian Willert - DLR

32-01 Flow Control

6/16/2025

4:00 PM to 5:30 PM - LL2

Chair: **Francesco Bertini - Avio Aero**

Chair: **Emil Goettlich -**

Chair: **Marcel Oettinger - MTU Aero Engines**

Presentations:

Performance Sensitivity of a Grooved Tip Seal to Manufacturing and Operational Geometry Deviations, {GT2025-151563}

Technical Paper Publication

Connor Wiese - Pennsylvania State University
Reid Berdanier - The Pennsylvania State University
Karen Thole - The Pennsylvania State University

Transonic Linear Cascade Demonstration of Acoustic Flow Control on High Work and Lift Turbines, {GT2025-152425}

Technical Paper Publication

Acar Celik - Technion-IIT
Abhijit Mitra - Technion-IIT
John Clark - Airforce Research Laboratory
Beni Cukurel - Technion-IIT

Aerodynamic Performance Evaluation of Leading Edge Tubercles on Low Pressure Turbine Blades at Very Low Reynolds Numbers and Higher Turbulence, {GT2025-152993}

Technical Paper Publication

Benjamin D. Frosst - Royal Military College of Canada
Asad Asghar - Royal Military College of Canada
William D. E. Allan - Royal Military College of Canada
Kyle T. Kavanaugh - Air Force Research Lab/RQTT
John Clark - Air Force Research Lab / RQTT

31-01 Tandem Design

6/16/2025

4:00 PM to 5:30 PM - LL1

Chair: **Lisa Brilliant - Pratt & Whitney**

Chair: **Daniel Wilkin II - GE Aerospace**

Chair: **Christian Aalburg - GE Aerospace**

Chair: **Michael Lockan -**

Presentations:

Experimental and Numerical Evaluation of a Highly-Loaded Multistage Low-Speed Axial Compressor Featuring Tandem Stator Vanes: Part 1 — Operational Behavior and Steady-State Flow Field, {GT2025-151868}

Technical Paper Publication

Daniel Jäger - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion
Patrick Steudel - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion
Volker Gümmer - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion

Experimental and Numerical Evaluation of a Highly-Loaded Multistage Low-Speed Axial Compressor Featuring Tandem Stator Vanes: Part 2 — Rotor Flow Field and Unsteady Flow Phenomena, {GT2025-151343}

Technical Paper Publication

Patrick Steudel - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion
Daniel Jäger - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion
Lukas Selmayr - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion
Volker Gümmer - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion

Experimental and Numerical Evaluation of a Highly-Loaded Multistage Low-Speed Axial Compressor Featuring Tandem Stator Vanes: Part 3 — Robustness Investigation of Inlet Pressure Profile Variations, {GT2025-153120}

Technical Paper Publication

Sagnik Banik - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion
Daniel Jäger - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion
Volker Gümmer - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion

14-02: Brush/Labyrinth Seal

6/16/2025

4:00 PM to 5:30 PM - LL6

Chair: **Aaron Bowsher** -

Chair: **Hui Tang** - *University of Bath*

Chair: **Michael D. Barringer** - *Penn State*

Chair: **Lesley Wright** - *Texas A&M University*

Chair: **Carl M. Sangan** -

Chair: **Michael J Pekris** -

Presentations:

Algorithm Based Generation of Realistic Bristle Distribution: Comparison Between an Unstructured and a Structured Bristle Package for Brush Seal Simulation, {GT2025-151207}

Technical Paper Publication

Moritz Ursprung - Insitute for Test an Simulation for Gas Turbines, German Aerospace Center (DLR)

Maksym Meyer - Hochschule München University of Applied Sciences

Simon Hausruckinger - Hochschule München University of Applied Sciences

Johann Göttler - MTU Aero Engines AG

François Cottier - MTU Aero Engines AG

Numerical Investigation on the Leakage Characteristics of a Straight-Through Labyrinth Seal With Novel Hole-Pattern Structures, {GT2025-152291}

Technical Paper Publication

Gürkan Ertuğral - TRMOTOR Power Systems Inc.

Özhan Öksüz - TRMOTOR Power Systems Inc.

Investigation of a Straight Through Labyrinth Seal with an Air-Curtain using Computational Fluid Dynamics and 1D Modelling, {GT2025-153688}

Technical Paper Publication

Avni Ertas - TUSAS ENGINE INDUSTRY

OMER UYAV - TUSAS ENGINE INDUSTRY

ERINC ERDEM - TUSAS ENGINE INDUSTRY

34-01 High-fidelity CFD – turbines

6/16/2025

4:00 PM to 5:30 PM - LL4

Chair: **Jeff Defoe** -

Chair: **Penghao Duan** -

Chair: **Eric DeShong** -

Presentations:

Transonic Flow Through a Low-Pressure Turbine Cascade Using a Local Discontinuous Galerkin Flux Reconstruction, {GT2025-151123}

Technical Paper Publication

Francesco Mario D'aftero - Kungliga Tekniska Hogskolan

Mihai Mihaescu - Kungliga Tekniska Hogskolan

Ardeshir Hanifi - Kungliga Tekniska Hogskolan

Evaluation of Lattice-Boltzmann Method Simulations for a 1-1/2 Stage Transonic Turbine With an Aggressive Interturbine Transition Duct, {GT2025-151494}

Technical Paper Publication

Matthew Langford - Techsburg, Inc.

Stephen Guillot - Techsburg, Inc.
Eric Monson - Solar Turbines Incorporated
Andrew Lombardi - Solar Turbines Incorporated
Gregory Heitland - Solar Turbines Incorporated

Simulation Approach for High-Lift, High-Work Low Pressure Turbine Aerodynamics Using the Lattice-Boltzmann Method, {GT2025-152719}

Technical Paper Publication

Matthew Langford - Techsburg, Inc.
Stephen Guillot - Techsburg, Inc.
Nathan Fletcher - U.S. Air Force Research Laboratory
Molly Donovan - U.S. Air Force Research Laboratory
Christopher Marks - U.S. Air Force Research Laboratory
John Clark - U.S. Air Force Research Laboratory
Avinash Jammalamadaka - Dassault Systèmes SIMULIA Corporation
Gregory Laskowski - Dassault Systèmes SIMULIA Corporation

04-22 Pressure Gain Combustion I

6/16/2025

4:00 PM to 5:30 PM - 109 A/B

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Muthuvel Murugan -**

Chair: **Ajay Agrawal - University of Alabama**

Chair: **Cristian Avila -**

Presentations:

Computationally Efficient Approach to Modeling 3-D Geometric Effects of Combustor Geometries in Rotating Detonation Engines Using 2-D Computational Fluid Dynamics, {GT2025-153955}

Technical Paper Publication

Piyush Raj - Virginia Polytechnic Institute and State University
Joseph Meadows - Virginia Polytechnic Institute and State University

Numerical Study of Counter-Rotating Wave Propagation in a Rotating Detonation Engine, {GT2025-153949}

Technical Paper Publication

Shrikar Banagiri - Virginia Polytechnic Institute and State University
Piyush Raj - Virginia Polytechnic Institute and State University
Joseph Meadows - Virginia Polytechnic Institute and State University

Reduced-Fidelity Detonation Model Using Multistate Approximation for Rotating Detonation Combustors, {GT2025-152510}

Technical Paper Publication

Yusuf Keskinöz - Department of Aerospace Engineering, University of Michigan
Oliver Gibson - University of Michigan
Venkatramanan Raman - University of Michigan

04-27 Combustion Dynamics - Modeling

6/16/2025

4:00 PM to 5:30 PM - 110

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Christopher Douglas** -

Chair: **Sourabh Shrivastava** -

Presentations:

Linear Stability Analysis of Transversal Thermoacoustic Modes in Reheat Combustors, {GT2025-152879}

Technical Paper Publication

Simon Manuel Heinzmann - ZHAW Winterthur

Harish Subramanian Gopalakrishnan - ZHAW Winterthur

Birute Wood - Ansaldo Energia Switzerland AG

Mirko Ruben Bothien - ZHAW Winterthur

Modeling the Response of a Forced Turbulent Premixed Flame Using Resolvent Analysis, {GT2025-153134}

Technical Paper Publication

Satyam Chauhan - Indian Institute of Science

Saarthak Gupta - Indian Institute of Science

Anindya Datta - Indian Institute of Science

Anagha Madhusudanan - Indian Institute of Science

Santosh Hemchandra - Indian Institute of Science

Impact of a Central Pilot Jet on the Stability of a Swirling Flow, {GT2025-153212}

Technical Paper Publication

Pratikshya Mohanty - Pennsylvania State University

Saarthak Gupta - Indian Institute of Science - Bengaluru

Santosh Hemchandra - Indian Institute of Science - Bengaluru

Yuan Xuan - Pennsylvania State University

Jacqueline O'Connor - Pennsylvania State University

04-28 Emissions Hydrogen/Ammonia I

6/16/2025

4:00 PM to 5:30 PM - 108

Chair: **Samir Rida** -

Chair: **Michael Klassen** - **CSEFIRE**

Chair: **Ramees Rahaman** - **UCF**

Presentations:

Measurements of CO and NOx Emissions From Premixed Turbulent Methane/Hydrogen Flames, {GT2025-153221}

Technical Paper Publication

Hari Priya Rajagopalan - Georgia Institute of Technology

Ben Emerson - Georgia Institute of Technology

Vishal Acharya - Georgia Institute of Technology

David Noble - EPRI

Tim Lieuwen - Georgia Institute of Technology

Effect of H2-Air Premixing Characteristics on NOx Emissions in Microinjector Systems, {GT2025-153396}

Technical Paper Publication

Guru Charan Ganesh - Georgia Institute of Technology

Hari Priya Rajagopalan - Georgia Institute of Technology

Jim Harper - EPRI

Vishal Acharya - Georgia Institute of Technology

David Noble - EPRI

Mixing Performance of Adjustable High Flame Speed Injector Configurations and NOx Emissions From a Recuperated Gas Turbine Operated on 100% Hydrogen, {GT2025-153886}

Technical Paper Publication

Walther Villatoro - UCI Combustion Laboratory

Vincent Mc Donell - UCI
Debolina Dasgupta - Argonne National Laboratory
Ray Hu - Capstone Green Energy
Robert Steele - EPRI

23-06 Thrust Bearings

6/16/2025

4:00 PM to 5:30 PM - 107 A/B

Chair: **Kai Feng** -

Chair: **Jurg Schiffmann** -

Presentations:

A Thermohydrodynamic Model and Analysis for a Thrust Hybrid Gas Bearing System and its Validation With Test Data, {GT2025-153361}

Technical Paper Publication

Wonbae Jung - Texas A&M Turbomachinery Laboratory
Adolfo Delgado - Texas A&M Turbomachinery Laboratory
Anthony Dudlo - Texas A&M Turbomachinery Laboratory
Sang-Guk Kang - DEVCOM Army Research Laboratory
Chol-Bum M. Kweon - DEVCOM Army Research Laboratory

On the Performance of Hybrid Thrust Bearings: Recess Design and Lubricant Influences, {GT2025-153980}

Technical Paper Publication

Homin Lim - Hanyang University
Keun Ryu - Hanyang University

Thermohydrodynamic Modeling and Analysis of Thrust Gas Bearings for High-Density Refrigerants, {GT2025-154136}

Technical Paper Publication

Arvind Prabhakar - Siemens DISW

36-02 Surrogate Model-based applications

6/16/2025

4:00 PM to 5:30 PM - LL3

Chair: **Marcus Meyer** -

Chair: **Adele Nasti** - Rolls-Royce

Chair: **Ivan Voutchkov** - Rolls-Royce

Presentations:

Lifting Prediction Under Casting and Boundary Condition Deviations in Turbine Blades With 3-D Transformer-Based Neural Operators, {GT2025-151212}

Technical Paper Publication

Jason Abdallah - Siemens Energy
Stefan Depeweg - Siemens AG
Kai Liebelt - Siemens Energy Global GmbH & Co. KG

Artificial Intelligence Surrogates for Flow Modeling of an Axial Compressor, {GT2025-153577}

Technical Paper Publication

Leonardo Pulga - Baker Hughes
Andrea Panizza - Baker Hughes
Laure Barrière - Baker Hughes
Giovanni De Martino - Baker Hughes

Vittorio Michelassi - Baker Hughes
Corrado Burberi - Baker Hughes
Satish Koyyalamudi - Baker Hughes

Physics Informed Machine Learning Model for Local Creep Prediction in Turbine Blade, {GT2025-153825}

Technical Paper Publication

Vipin Pal - Siemens Limited
Amit Kumar Singh - Siemens Limited
Souvik Chakraborty - Indian Institute of Technology Delhi
Jason Abdallah - Siemens Energy
Rishabh Shrivastava - Siemens Limited

03-05 Efficiency Improvement and Carbon Footprint reduction in turbomachinery Systems

6/16/2025

4:00 PM to 5:30 PM - 105

Chair: **Angela Serra - Baker Hughes**

Chair: **Domenico Borello - Università di Roma La Sapienza**

Chair: **Mairah Ahmed - UCF**

Presentations:

How Accurate Is Your Carbon Footprint? Measuring the Uncertainty With Pedigree Matrix in the Design of an Oxyfuel Combustion Gas Turbine, {GT2025-153244}

Technical Paper Publication

Tiziano Galmacci - Università degli studi di Perugia
Luca Fantaccione - Baker Hughes
Filippo Luzi - Università degli studi di Perugia
Giacomo Verlezza - Università degli Studi di Perugia
Giacomo Ragni - Baker Hughes
Francesco Fantozzi - Università degli studi di Perugia

An Analysis of Carbon Footprint Sensitivity to Recycling Content of High-Performance Turbomachinery Components Applying Circular Footprint Formula (CFF), {GT2025-153963}

Technical Paper Publication

Rachele Orlandi - Baker Hughes
Luca Lombardozzi - Baker Hughes
Francesca Carusone - Baker Hughes
Angela Serra - Baker Hughes
Francesco Fantozzi - University of Perugia

Decarbonisation of Industrial Power Generation Gas Turbines With Bio-Alcohols, {GT2025-151881}

Technical Paper Publication

James Harman-Thomas - Uniper Technologies
Carlo Antonio Caputo - Cranfield University
Krzysztof Danielak - Cranfield University
David Abbott - Uniper Technologies
Xiaoxiao Sun - Cranfield University

01-03 Engine Performance and Cycle Design I

6/16/2025

4:00 PM to 5:30 PM - 111

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**

Chair: **Curtis Vedder - Honeywell**

Chair: **TAYLAN ERCAN - Middle East Technical University**

Presentations:

On the Performance of Common-Core Turboprops, {GT2025-153200}

Technical Paper Publication

Mavroudis Kavvalos - German Aerospace Center

Dimitrios Bermperis - Malardalen University (MDU)

Georgios Goinis - German Aerospace Center (DLR)

David Kaiser - German Aerospace Center (DLR)

Konstantinos Kyprianidis - Malardalen University (MDU)

Surrogate Modelling of a Turboprop Engine Performance, {GT2025-153546}

Technical Paper Publication

Michail K. Psaropoulos - Aristotle University of Thessaloniki

Magdalini M. Kaimasidou - Aristotle University of Thessaloniki

Konstantinos I. Papadopoulos - Aristotle University of Thessaloniki

Vasilis G. Gkoutzamanis - Aristotle University of Thessaloniki

Panagiotis Giannakakis - SAFRAN SA

Anestis I. Kalfas - Aristotle University of Thessaloniki

Performance Deterioration Analysis of Aero-Derivative Gas Turbines, {GT2025-151373}

Technical Paper Publication

Walelgne Molla Salilew - Universiti Teknologi Petronas

Tamiru Alemu Lemma - Universiti Teknologi PETRONAS

28-01: Reduced-Order Modeling of bladed disks

6/16/2025

4:00 PM to 5:30 PM - 106

Chair: **Luigi Carassale -**

Chair: **Carlos Martel - Polytechnic University of Madrid**

Chair: **Marios Sasakaros - RWTH Aachen University**

Presentations:

Physics-Informed Neural Networks for Reduced-Order Modeling of Turbomachinery Blisks With Small and Large Mistuning, {GT2025-152603}

Technical Paper Publication

Mihai Cimpuiaru - University of Michigan - Ann Arbor

Sean Kelly - University of Michigan - Ann Arbor

Bogdan Epureanu - University of Michigan - Ann Arbor

Parallel Computation of the Nonlinear Forced Response of a Bladed Disk With Friction Contacts Using the FETI Method, {GT2025-152679}

Technical Paper Publication

Andrea Saponaro - Politecnico di Torino

Giuseppe Battiato - Politecnico di Torino

Christian Maria Firrone - Politecnico di Torino

Stefano Zucca - Politecnico di Torino

Capturing Mistuning Within Shrouded Integrally Bladed Disks With the Generalized Model of Mistuning, {GT2025-151764}

Technical Paper Publication

Troy Krizak - The Ohio State University

Kiran D'souza - The Ohio State University

05-02: GT Control

6/16/2025

4:00 PM to 5:30 PM - LL10

Chair: **Liang Tang** -

Chair: **Lubomir Ribarov** - *U.S. Merchant Marine Academy*

Chair: **Joshua Adams** -

Presentations:

Model Matching and Controller Development for a Small-Scale Electric Aircraft Engine Testbed, {GT2025-152610}
Technical Paper Publication

Jonah Sachs-Wetstone - NASA Glenn Research Center

Marcus Horning - HX5, LLC

Nolan Lamarche - HX5, LLC

Dennis Culley - NASA Glenn Research Center

Minimizing Gas-Fired Power Plant Operating Cost and CO2 Emissions With Optimized Scheduling of Gas Turbines and Batteries via Mixed Integer Programming, {GT2025-152623}

Technical Paper Publication

Marcin Adamowicz - Solar Turbines

Purushotham Balaji - Caterpillar Incorporated

Cody Allen - Solar Turbines

Identification, Modeling and Control of Fuel Metering Valves in Fuel-Flexible Gas Turbine, {GT2025-153880}

Technical Paper Publication

Lorenzo Ferrari - University of Pisa – DESTEC, Italy

Roberta La Venia - University of Pisa

Alberto Landi - University of Pisa

Tiziano Roma - Baker Hughes - Nuovo Pignone

Lorenzo Giovanardi - Baker Hughes - Nuovo Pignone

18-01: Additive Manufacturing I

6/16/2025

4:00 PM to 5:30 PM - LL9

Chair: **Scott Keller** - *Doosan Turbomachinery Services*

Chair: **Yogi Pardhi** -

Chair: **Pontus Slottner** -

Chair: **Alex Bridges** -

Presentations:

Optimizing Mechanical Performance of LPBF Inconel 718 for Turboengine Applications Through Tailored Heat Treatment and Process Parameter Strategies, {GT2025-152015}

Technical Paper Publication

Galina Kasperovich - Institute of Materials Research, German Aerospace Center (DLR), Cologne, Germany

Joachim Gussone - Institute of Materials Research, German Aerospace Center (DLR), Cologne, Germany

Yasuko Besel - Institute of Materials Research, German Aerospace Center (DLR), Cologne, Germany

Marion Bartsch - Institute of Materials Research, German Aerospace Center (DLR), Cologne, Germany

Jan Haubrich - Institute of Materials Research, German Aerospace Center (DLR), Cologne, Germany

Microstructures and Tensile Properties of Cantor High Entropy Alloy Manufactured by Laser Powder Directed Energy Deposition, {GT2025-153275}

Technical Paper Publication

Devin Wang - Carleton University
Scott Yandt - National Research Council Canada
Xiao Huang - Carleton University

Learnings in the Qualification of ABD®900AM for Turbine, Aerospace, and Energy Applications, {GT2025-152958}

Technical Paper Publication

John Shingledecker - Electric Power Research Institute
Alex Bridges - Electric Power Research Institute
Nikki Harless - Electric Power Research Institute
Richard Grylls - Barnes Global Advisors
Zara Hussain - Alloyed
Seba Pereira - Siemens Energy
Shankar Srinivasan - Siemens Energy
Marco Musto - Citrine Informatics
Kenneth Kroenlein - Citrine Informatics
James Saal - Citrine Informatics

06-01 Carbon Capture Integration

6/16/2025

4:00 PM to 5:30 PM - 112

Chair: **Ioannis Roumeliotis - Cranfield University**

Chair: **Ward De Paepe - UMONS**

Chair: **Alessandro Sorce - Università degli Studi di Genova**

Chair: **Majed Sammak - GE Power**

Chair: **Homam Nikpey Somehsaraei - University of Stavanger**

Presentations:

Modeling and Performance of an Expander Cryogenic Carbon Capture System, {GT2025-152986}

Technical Paper Publication

Joshua Schmitt - Southwest Research Institute
Fernando Karg Bulnes - Southwest Research Institute
Douglas Hofer - Southwest Research Institute
Natalie Smith - Southwest Research Institute

Gas Turbine Combined Cycle System Integration With Exhaust Gas Recirculation for Boosted Power and Improved Carbon Capture Operations, {GT2025-153157}

Technical Paper Publication

Majed Sammak - GE Vernova
Parag Kulkarni - GE Vernova
Tiffany Camp - GE Vernova
Todd Denman - GE Vernova
Gian-Luigi Agostinelli - GE Vernova

Integrating Turbine Blade Cooling With Exhaust Gas Recirculation for Enhanced Carbon Capture in Combined Cycle Gas Turbine, {GT2025-153625}

Technical Paper Publication

Abhishek Dubey - University of Genova
Antoine Verhaeghe - University of Mons (UMONS)
Ward De Paepe - University of Mons (UMONS)
Alessandro Sorce - University of Genova

30-01 Fluid Properties and Dynamics

6/16/2025

4:00 PM to 5:30 PM - LL5

Chair: **Timothy Allison** - *Southwest Research Institute*

Chair: **Ritesh Ghorpade** - *University of Central Florida*

Chair: **Sam Lim** - *Dow*

Presentations:

Sensitivity Analysis of Phase Change Modelling for Non-Ideal Fluids in Turbomachinery Applications, {GT2025-151619}

Technical Paper Publication

Katharina Tegethoff - *University of Cambridge*

Sebastian Schuster - *University of Duisburg Essen*

Spatial Dynamics of Turbulence and Thermodynamic Nonlinearities in Supercritical CO₂ Mixing Layers, {GT2025-152964}

Technical Paper Publication

S M Al Mamun Or Roshid - *Prairie View A&M University*

Dhruv Purushotham - *Georgia Institute of Technology*

Joseph Oefelein - *Georgia Institute of Technology*

Ziaul Huque - *Prairie View A&M University*

A Virial Equation of State for CO₂ Mixtures for Turbomachinery Design and Analysis, {GT2025-153788}

Technical Paper Publication

Ahmed Abdelwahab - *Linde Inc.*

Avani Gupta - *Linde Inc.*

Jiaye Gan - *Linde Inc.*

Jeremiah Rauch - *Linde Inc.*

Christopher Dalton - *Linde Inc.*

TUESDAY, 6/17/2025

13-02: Thermal management applications - Heat exchangers

6/17/2025

8:00 AM to 10:00 AM - LL6

Chair: **Paul Giel** - *NASA Glenn Research Center*

Chair: **Silvia Ravelli** -

Chair: **Lesley Wright** - *Texas A&M University*

Chair: **Carl Sangan** - *University of Bath*

Chair: **Jeffrey Bons** - *The Ohio State University*

Chair: **Oliver Pountney** -

Presentations:

Experimental Investigation of Enhanced Heat Sinks for Hybrid Electric Aircraft, {GT2025-151174}

Technical Paper Publication

Faezeh Rasimarzabadi - *National Research Council Canada*

Utkarsh Sheel Anand - *Carleton University*

Evgueni Bordatchev - *National Research Council Canada*

Hassan Azarkish - *Calogy Solutions*

Mahmood Shirazy - *Calogy Solutions*

Thermo-Mechanical Simulation of a Skin Heat Exchanger Considering Phase-Change Thermal Boundary Conditions, {GT2025-151667}

Technical Paper Publication

Guillermo Torres - ITPaero

Jose M. Chaquet - ITPaero

Oier Jauntsarats - ITPaero

Diana Carrasco - ITPaero

The Impact of Recovery Effect on Five-Hole Probes With Unshielded Thermocouples in a Heat Exchanger Sector Test Rig, {GT2025-152268}

Technical Paper Publication

Johannes Tesch - Technische Universität Dresden

Martin Lange - Technische Universität Dresden

Ashish Sharma - GE Aerospace

Ronald Mailach - Technische Universität Dresden

Topology Optimization of Discontinuous Fin-Based Microchannel Heat Exchangers, {GT2025-153727}

Technical Paper Publication

Shubham Kumar Vishwakarma - Indian Institute of Science

Pramod Kumar - Indian Institute of Science

Pradip Dutta - Indian Institute of Science

Nagendra Somanath - Indian Institute of Science

Pramodchandra Gopi - Triveni Turbine Limited

32-03 CFD Studies

6/17/2025

8:00 AM to 10:00 AM - LL2

Chair: **Giacomo Persico - Politecnico di Milano**

Presentations:

Effects of Wall Temperature on Transonic Gas Turbine Aerothermodynamics: A Wall-Modeled LES Study, {GT2025-152665}

Technical Paper Publication

Francesco De Vanna - Università degli Studi di Padova

Ernesto Benini - Università degli studi di Padova

Aero-Thermal-Structural Optimization of a High-Pressure Turbine Rotor With Robustness Evaluation to In-Service Deterioration, {GT2025-152944}

Technical Paper Publication

Mario Carta - University of Cagliari

Roberto Putzu - University of Cagliari

Tiziano Ghisu - University of Cagliari

Shahrokh Shahpar - Rolls-Royce plc

Response of Transitional Boundary Layers Over Low-Pressure Turbine Blades to Varying Characteristics of Free-Stream Turbulence, {GT2025-153663}

Technical Paper Publication

Ananth S M - CERFACS

Nicolas Odier - CERFACS

Florent Duchaine - CERFACS

Giacomo Pastorino - von Karman Institute for Fluid Dynamics

Elissavet Boufidi - von Karman Institute for Fluid Dynamics

Fabrizio Fontaneto - von Karman Institute for Fluid Dynamics

The Effect of Training Data on Predicting Turbulent Flow Through a Linear Cascade Using Physics-Informed Neural Networks, {GT2025-153885}

Technical Paper Publication
Ezra McNichols - NASA
Jeffrey Bons - The Ohio State University

31-06 Fan & Propulsor Design

6/17/2025

8:00 AM to 10:00 AM - LL1

Chair: **Lisa Brilliant - Pratt & Whitney**

Chair: **Daniel Wilkin II - GE Aerospace**

Chair: **Maysaa Rizk -**

Chair: **Nick Nolcheff - Honeywell**

Presentations:

Aft Fuselage Boundary Layer Ingesting Propulsion System Design, {GT2025-152500}

Technical Paper Publication

Zhibo Chen - Massachusetts Institute of Technology

Marshall Galbraith - Massachusetts Institute of Technology

Zoltán Spakovszky - Massachusetts Institute of Technology

Edward Greitzer - Massachusetts Institute of Technology

Design and Testing of a TRL-3 Open Rotor for Aeroacoustics and Aeromechanics Research, {GT2025-153875}

Technical Paper Publication

Kelvin Figueroa-Ibrahim - NASA Glenn Research Center

Jacob Gold - NASA Glenn Research Center

Daniel Sutliff - NASA Glenn Research Center

Clifford Brown - NASA Glenn Research Center

Ryne Wang - Notre Dame Turbomachinery Laboratory

Ian Martin - Notre Dame Turbomachinery Laboratory

Mark Ross - Notre Dame Turbomachinery Laboratory

Scott Morris - Notre Dame Turbomachinery Laboratory

A Novel Design Method for Electric Aircraft Propulsors, {GT2025-151333}

Technical Paper Publication

Alexander Reaves - Whittle Laboratory

James Taylor - Whittle Laboratory

Christopher Clark - Whittle Laboratory

Mitigation of the Bifurcation Impact in Low Fan Pressure Ratio Propulsion Systems by Individual OGV Designs, {GT2025-153933}

Technical Paper Publication

Marco Trost - German Aerospace Center (DLR)

Rainer Schnell - German Aerospace Center (DLR)

12-02: End-wall and Tip Film Cooling

6/17/2025

8:00 AM to 10:00 AM - LL7

Chair: **David Flodman - Mitsubishi Heavy Industries**

Chair: **Lamyaa El-Gabry -**

Chair: **Ardeshir Riahi -**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl Sangan - University of Bath**

Chair: **Gongnan Xie - Northwestern Polytechnical University**

Presentations:

Effect of Suction Side Squealer Tip Height on Blade Tip Film Cooling in a Transonic Cascade, {GT2025-152333}

Technical Paper Publication

Ming-Feng Yeh - Texas A&M University

Lesley Wright - Texas A&M University

Je-Chin Han - Texas A&M University

On the Impact of Upstream Bump Geometry on the Aerothermal Performance of a 7-7-7 Shaped Hole, {GT2025-152365}

Technical Paper Publication

Giovanna Barigozzi - Università di Bergamo

Ali Zamiri - Korea University

Giovanni Brumana - Università di Bergamo

Mauro Carnevale - Università di Bergamo

Jin Taek Chung - Korea University

Experimental Study of Endwall Film Cooling and Heat Transfer for Different Upstream Slot and Hole Geometries in an Annular Sector Cascade Under High-Speed and Low-Speed Conditions – Part 1: Film Cooling Effectiveness, {GT2025-153362}

Technical Paper Publication

Christian Landfester - German Aerospace Center

Moritz Klappenberger - University of Kaiserslautern-Landau

Martin Böhle - University of Kaiserslautern-Landau

Robert Krewinkel - Graz University of Technology

Experimental Study of Endwall Film Cooling and Heat Transfer for Different Upstream Slot and Hole Geometries in an Annular Sector Cascade Under High-Speed and Low-Speed Conditions – Part 2: Heat Transfer and Aerodynamics, {GT2025-153364}

Technical Paper Publication

Christian Landfester - German Aerospace Center

Moritz Klappenberger - University of Kaiserslautern-Landau

Martin Böhle - University of Kaiserslautern-Landau

Robert Krewinkel - Graz University of Technology

34-03 Turbulence modeling, CFD models, and assessment

6/17/2025

8:00 AM to 10:00 AM - LL3

Chair: **Jeff Defoe -**

Chair: **Kapil Panchal - Elliott**

Chair: **Jason Bourgeois -**

Presentations:

An Assessment of Algebraic and Differential Reynolds-Stress Models for a Highly-Bent Serpentine Aircraft Intake, {GT2025-151860}

Technical Paper Publication

Sean Hanrahan - The University of Melbourne

Julian Scheibel - Universität der Bundeswehr München

Andreas Grois - Universität der Bundeswehr München

Marcel Stöbel - Universität der Bundeswehr München

Melissa Kožul - The University of Melbourne

Suad Jakirlić - Technische Universität Darmstadt

Dragan Kožulović - Universität der Bundeswehr München

Richard Sandberg - The University of Melbourne

Optimisation of SA-PG ω Turbulence Model for Multi-Stage Compressor at Off-Design Conditions, {GT2025-152022}
Technical Paper Publication

Ryosuke Seki - Mitsubishi Heavy Industries, LTD.

Yuto Terauchi - Mitsubishi Heavy Industries, LTD.

Fanzhou Zhao - Imperial College London

Xiao He - Shanghai Jiao Tong University

Mehdi Vahdati - Universidad Politécnica de Madrid

Numerical Prediction of the Heat Loads on a Turbine Vane Test Case, {GT2025-153144}
Technical Paper Publication

Niccolò Castelli - University of Florence

Tommaso Bacci - University of Florence

Sabrina Giuntini - Baker Hughes

Roberto Pacciani - University of Florence

Antonio Andreini - University of Florence

A New Body Force-Based Modelling Approach for Turbomachinery Aerodynamics: Formulation, Verification and Implementation Aspects, {GT2025-153775}

Technical Paper Publication

Dimitrios Lamprakis - Cranfield University

Mauro Righi - Cranfield University

Vassilios Pachidis - Cranfield University

04-06 High Hydrogen II

6/17/2025

8:00 AM to 10:00 AM - 110

Chair: **Samir Rida -**

Chair: **David Noble - EPRI**

Chair: **Debolina Dasgupta - ANL**

Presentations:

Fully Premixed Hydrogen-Air Swirl Flames Shapes and Transient Processes, {GT2025-152560}

Technical Paper Publication

CP Premchand - The University of Tennessee Space Institute (UTSI)

Sagar Godse - The University of Tennessee Space Institute (UTSI),

Jonathan Kolwyck - The University of Tennessee Space Institute (UTSI)

Larry Alexander - The University of Tennessee Space Institute (UTSI)

Joel Davenport - The University of Tennessee Space Institute (UTSI)

Ragini Acharya - The University of Tennessee Space Institute (UTSI)

Paul Palies - The University of Tennessee Space Institute (UTSI)

Influence of Variable Fuel Staging on the Flow Structures in a Multi-Jet Burner Operated on Lean-Premixed Hydrogen, {GT2025-153254}

Technical Paper Publication

Alexander Jaeschke - Technische Universität Berlin

Dominik Wassmer - MAN Energy Solutions SE

Christian Oliver Paschereit - Technische Universität Berlin

A Novel Swirled Tri-Channel Injector for Hydrogen Combustion, {GT2025-153779}

Technical Paper Publication

Maxime Leroy - EM2C / Safran Tech

Clément Mirat - Laboratoire EM2C

Antoine Renaud - Laboratoire EM2C

Stefano Puggelli - Safran Tech
Ronan Vicquelin - Laboratoire EM2C

04-21 Atomization and Spray Combustion II

6/17/2025

8:00 AM to 10:00 AM - 109 A/B

Chair: **Samir Rida** -

Chair: **David Noble** - EPRI

Chair: **Brandon Sforzo** - ANL

Chair: **Pedro M. de Oliveira** - University of Cambridge

Chair: **Santosh Hemchandra** - Indian Institute of Science

Presentations:

Effect of Intake Airflow and Fuel Injection Pressure on Swirling Flame Characteristics of Diesel and JP-8, {GT2025-153356}

Technical Paper Publication

Shubhra Kanti Das - University of Massachusetts Lowell

Md Nayer Nasim - University of Massachusetts Lowell

Behlol Nawaz - University of Massachusetts Lowell

Joshua Landis - University of Massachusetts Lowell

Oliver Dyakov - University of Massachusetts Lowell

Noah Van Dam - University of Massachusetts Lowell

J. Hunter Mack - University of Massachusetts Lowell

Two-Phase Flow Imaging and Spectral Characterization of Ammonia-Blended Methanol Spray Flames, {GT2025-153631}

Technical Paper Publication

Dharma Ojha - Texas A&M University

Matthew Hay - Texas A&M University

Adolfo Delgado - Texas A&M University

Waruna Kulatilaka - Texas A&M University

Detailed Numerical Approach for Liquid Ammonia Spray Combustion Accounting for Flash Boiling, {GT2025-153956}

Technical Paper Publication

Vivek Kumar - Ansys Inc.

Sourabh Shrivastava - Ansys Inc.

Harshrajsinh Jadeja - Ansys Inc

Sravan Kumar Nallamothu - Ansys Inc

Frequency Domain Analysis of the Dynamic Spray Behavior of Aviation-Relevant Fuel Sprays to Characterize Alternative Jet Fuels Using X-Ray Diagnostics, {GT2025-154263}

Technical Paper Publication

Ashwini Karmarkar - Argonne National Lab

Chi Young Moon - Argonne National Lab

Alan Kastengren - Argonne National Lab

Christopher Powell - Argonne National Lab

Angela Kimber Ehlich - Woodward FST

Brandon Sforzo - Argonne National Lab

04-26 Combustion Dynamics - Hydrogen Flames II

6/17/2025

8:00 AM to 10:00 AM - 108

Chair: **David Noble - EPRI**
Chair: **Samir Rida -**
Chair: **Carlo Arguinizoni - Ansys**
Chair: **Antoine Durocher -**
Presentations:

Azimuthal Instabilities Arising in an Annular Combustor Equipped With Pure Hydrogen Injection Units, {GT2025-151225}

Technical Paper Publication

Nicolas Vaysse - Laboratoire EM2C (CNRS UPR288), CentraleSupélec, Université Paris-Saclay
Daniel Durox - Laboratoire EM2C (CNRS UPR288), CentraleSupélec, Université Paris-Saclay
Ronan Vicquelin - Laboratoire EM2C (CNRS UPR288), CentraleSupélec, Université Paris-Saclay
Sébastien Candel - Laboratoire EM2C (CNRS UPR288), CentraleSupélec, Université Paris-Saclay
Antoine Renaud - Laboratoire EM2C (CNRS UPR288), CentraleSupélec, Université Paris-Saclay

Structure of High-Pressure Premixed Ammonia, Hydrogen, and Methane Flames With 100 kHz OH-PLIF Measurements, {GT2025-152470}

Technical Paper Publication

Tristan Shahin - Purdue University
Alexander Hodge - Purdue University
Benjamin Murdock - Purdue University
Keaton Koenig - Purdue University
Ellouise Moehring - Purdue University
Rohan Gejji - Purdue University
Robert Lucht - Purdue University
Carson Slabaugh - Purdue University

The Impact of a Surrounding Co-Flow on the Thermoacoustic Stability of a Premixed CH₄/H₂ Flame, {GT2025-152687}

Technical Paper Publication

Qian Wang - Norwegian university of science and technology
Aksel Ånestad - Norwegian university of science and technology
Nicholas Alexander Worth - Norwegian university of science and technology

A Direct Comparison of Flame-Transfer Matrices Measurements Between Hydrogen and Kerosene Flames in the Same Combustor at Realistic Aero-Engine Conditions, {GT2025-153683}

Technical Paper Publication

Andre Fischer - Rolls-Royce Deutschland
Claus Lahiri - Rolls-Royce Deutschland
Carsten Clemen - Rolls-Royce Deutschland

23-07 Gas Foil Thrust Bearings

6/17/2025

8:00 AM to 10:00 AM - 106

Chair: **Marie Kasprzyk -**
Chair: **Jurg Schiffmann -**
Chair: **Marie Kasprzyk -**
Presentations:

Passively Enhancing Gas Thrust Bearing Performance Through an Inexpensive and Straightforward Design Optimization of the Rotor Disk, {GT2025-151936}

Technical Paper Publication

Johannis Triebwasser - Technical University of Darmstadt, Institute of Applied Dynamics
Markus Eickhoff - Technical University of Darmstadt, Institute of Applied Dynamics

Bernhard Schweizer - Technical University of Darmstadt, Institute of Applied Dynamics

Design, Commissioning and Testing of a 230 mm Gas Foil Thrust Bearing Test Rig, {GT2025-153334}

Technical Paper Publication

Daniel Lubell - Oil-Free Machinery, LLC

Dennis Weissert - Oil-Free Machinery, LLC

Navjot Chauhan - Oil-Free Machinery, LLC

Performance Evaluation and Comparison of Hybrid Rigid and Hybrid Foil Thrust Bearings, {GT2025-154008}

Technical Paper Publication

EHIREMEN EBEWELE - UNIVERSITY OF TEXAS ARLINGTON

Woongeon Lee - University of Texas at Arlington

Daejong Kim - University of Texas at Arlington

Experimental Investigation of the Influence of Gas Foil Thrust Bearings on the Stability Behaviour of Rotor-Bearing Systems, {GT2025-154117}

Technical Paper Publication

Berk Sorgec - Technische Universität Berlin

Robert Liebich - Technische Universität Berlin

21-01: Exhaust, Last Stage Blades and Low Pressure Section

6/17/2025

8:00 AM to 10:00 AM - LL8

Chair: **Michal Hoznedl - Doosan**

Chair: **Mugurel Stanciu - EDF**

Presentations:

Experimental and Numerical Investigations of the Scale Effect of the Non-Equilibrium Steam in the Flow Patterns, {GT2025-152826}

Technical Paper Publication

Soichiro Tabata - Mitsubishi Heavy Industries, Ltd.

Hiromichi Kitahara - Mitsubishi Heavy Industries, Ltd.

Jin Aoyagi - Mitsubishi Heavy Industries, Ltd.

Tadashi Takahashi - Mitsubishi Heavy Industries, Ltd.

Numerical Analyses for Design and Performance Prediction of Steam Turbine Axial Exhaust Hood, {GT2025-153191}

Technical Paper Publication

Isacco Rafanelli - University of Florence

Antonio Andreini - University of Florence

Lorenzo Arcangeli - Baker Hughes

Sara Rizzi - Baker Hughes

Nicola Maceli - Baker Hughes

Tommaso Diurno - Baker Hughes

Effect of Seawater Flow on Low-Pressure Steam Turbine Isentropic Efficiency and Exhaust Moisture Content, {GT2025-153694}

Technical Paper Publication

Yahya Zafar - ACWA POWER

Muhammad Adnan Saroosh - ACWA POWER

Jalal Hunain Zia - ACWA POWER

Muhammad Azhar Janjua - ACWA POWER

Aeromechanical Test of a Newly Developed Low-Pressure Section for Variable Speed Application, {GT2025-153792}

Technical Paper Publication

Lorenzo Arcangeli - Baker Hughes

Lorenzo Cusi - Baker Hughes
Jury Auciello - Baker Hughes
Marco Marrazzo - Baker Hughes
Lorenzo Miris - Baker Hughes
Emanuela Gallo - Baker Hughes
Simone Conti - Baker Hughes

22-02 Compressor Aerodamping, Forced Response, and Mistuning

6/17/2025

8:00 AM to 10:00 AM - 107 A/B

Chair: **Yoon Choi - GE Aerospace**

Chair: **Lorenzo Pinelli - University of Florence**

Chair: **Toshinori Watanabe - University of Tokyo**

Presentations:

Experimental and Numerical Investigation of Blade Loading Influence on Aerodynamic Damping in an Axial Compressor, {GT2025-151262}

Technical Paper Publication

Toshihiko Azuma - University of Stuttgart, ITSM

Maiken Günther - University of Stuttgart, ITSM

Daniel Nagel - University of Stuttgart, ITSM

Yuto Terauchi - Mitsubishi Heavy Industries, Ltd

Damian M. Vogt - University of Stuttgart, ITSM

Impact of Rotor-Rotor Interaction on the Mistuned Forced Response Prediction of an Embedded Compressor Rotor: Effect of Sideband Travelling Wave Excitations and Random Mistuning, {GT2025-152296}

Technical Paper Publication

Shreyas Hegde - Pratt&Whitney

Huan-Min Shang - Pratt&Whitney

Improved Strain-Energy Based Mistuning Models - Part II: Understanding the Mistuned Blade Response for a Non-Isolated Family of Modes, {GT2025-152790}

Technical Paper Publication

Shreyas Hegde - Pratt&Whitney

Robert Kielb - Duke University

01-11 Electrified Propulsion and Novel Cycles I

6/17/2025

8:00 AM to 10:00 AM - 111

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**

Chair: **Curtis Vedder - Honeywell**

Chair: **Andrew Nix - West Virginia University**

Chair: **Dimitrios Bermperis - Malardalen University**

Presentations:

On the Performance Potential of Ducted Fans With Integrated Heat Exchangers, {GT2025-151605}

Technical Paper Publication

Mavroudis Kavvalos - German Aerospace Center (DLR)

Susanna Bunse - German Aerospace Center (DLR)

Maximilian Mennicken - German Aerospace Center (DLR)

Rainer Schnell - German Aerospace Center (DLR)

Niccolo Ferrari - Technical University Vienna
Christopher Gross - Advanced Drivetrain Technologies GmbH

Performance of an Ammonia Turbofan With the Inclusion of an Optimized Bleed Air Heat Exchanger, {GT2025-154219}
Technical Paper Publication

Lucas Cavalcante - Center for Advanced Turbomachinery and Energy Research
Marcel Otto - Center for Advanced Turbomachinery and Energy Research
Jayanta Kapat - Center for Advanced Turbomachinery and Energy Research

Design of Fuel Cell Systems in Aviation – Part I: Modelling and Component Design, {GT2025-151607}
Technical Paper Publication

Marcel Stoewer - Institute of Turbomachinery and Fluid Dynamics
Patrick Meyer - Institute of Jet Propulsion and Turbomachinery
Marius Nozinski - Institute of Thermodynamics
Sebastian Lück - Institute of Jet Propulsion and Turbomachinery
Stephan Kabelac - Institute of Thermodynamics
Jens Friedrichs - Institute of Jet Propulsion and Turbomachinery
Jan Goeing - Institute of Jet Propulsion and Turbomachinery
Dajan Mimic - Institute of Turbomachinery and Fluid Dynamics

Design of Fuel Cell Systems in Aviation – Part II: Evaluation and Mission Analysis, {GT2025-151606}
Technical Paper Publication

Patrick Meyer - Institute of Jet Propulsion and Turbomachinery, Technische Universität Braunschweig
Marcel Stoewer - Institute of Turbomachinery and Fluid Dynamics, Leibniz Universität Hannover
Marius Nozinski - Institute of Thermodynamics, Leibniz Universität Hannover
Sebastian Lück - Institute of Jet Propulsion and Turbomachinery, Technische Universität Braunschweig
Stephan Kabelac - Institute of Thermodynamics, Leibniz Universität Hannover
Dajan Mimic - Institute of Turbomachinery and Fluid Dynamics, Leibniz Universität Hannover
Jens Friedrichs - Institute of Jet Propulsion and Turbomachinery, Technische Universität Braunschweig
Jan Goeing - Institute of Jet Propulsion and Turbomachinery, Technische Universität Braunschweig

19-02 Applications

6/17/2025

8:00 AM to 10:00 AM - 114

Chair: **Aaron Rimpel** - Southwest Research Institute

Chair: **Majid Asli** - Brandenburg University of Technology

Chair: **Keun Ryu** -

Presentations:

Highly Efficient Recuperated Brayton Converter for Lunar Power Applications: Cycle and Conceptual Turbomachinery Design, {GT2025-151152}

Technical Paper Publication

Gregory Daines - General Electric Aerospace Research
Lokaditya Ryali - General Electric Aerospace Research
Nicholas Candelino - General Electric Aerospace Research
Bugra Ertas - General Electric Aerospace Research
Todd Jankowski - General Electric Aerospace Research
Giridhar Jothiprasad - General Electric Aerospace Research
Gregory Natsui - General Electric Aerospace Research
Eyitayo Owoeye - General Electric Aerospace Research
Brian M Rush - General Electric Aerospace Research
Thomas Vandeputte - General Electric Aerospace Research
John R Yagielski - General Electric Aerospace Research
Leyue Zhang - General Electric Aerospace Research

NOx Reduction Through Swirl Injector for Hydrogen and Methane Combustion in Mild Conditions, {GT2025-154188}

Technical Paper Publication

Jojomon Joseph - MITIS SA

Mahdi Jamshidiha - Université Libre de Bruxelles, École Polytechnique de Bruxelles, Aero-Thermo-Mechanics Laboratory,

Danish Rehman - MITIS SA

Axel Coussement - Université Libre de Bruxelles

Alessandro Parente - Université Libre de Bruxelles

Michel Delanaye - MITIS SA

Development of High Speed Aeropropulsion Engine Simulator With Foil Bearings, {GT2025-151906}

Technical Paper Publication

Daejong Kim - The University of Texas at Arlington

Jared Taketa - Rolls-Royce Corporation

Experimental Investigation of Condensing Two-Phase Flows in a Turbocharger Turbine for Fuel Cell Applications, {GT2025-153580}

Technical Paper Publication

Dominik Bezler - Institute of Thermal Turbomachinery and Machinery Laboratory, University of Stuttgart

Adem Tosun - Institute of Thermal Turbomachinery and Machinery Laboratory, University of Stuttgart

Fabian F. Müller - Institute of Thermal Turbomachinery and Machinery Laboratory, University of Stuttgart

Charlotte Malkinson - Cummins Components & Software - Turbo Technologies

Damian M. Vogt - Institute of Thermal Turbomachinery and Machinery Laboratory, University of Stuttgart

33-02 Deposition and erosion in hot engine components

6/17/2025

8:00 AM to 10:00 AM - LL4

Chair: **Nagaraja Rudrapatna - Honeywell Aerospace Technologies**

Chair: **Sergio Lavagnoli - VKI**

Presentations:

Investigation of Ash Deposition Behaviour From Biogenic Solid Fuel Under Gas Turbine Conditions With Film Cooling, {GT2025-151130}

Technical Paper Publication

Wunder Luis - Technische Universität Dresden

Daniel Bernhardt - Technische Universität Dresden

Michael Beckmann - Technische Universität Dresden

Modeling Deposition in Gas Turbines With Conjugate Mesh-Morphing and Temperature Sensitivity, {GT2025-152992}

Technical Paper Publication

Bradley Jacobs - The Ohio State University

Jeffrey Bons - The Ohio State University

Comprehensive Assessment of Internal Deposition on an Impingement Cooling Circuit at Engine Relevant Temperatures, {GT2025-153353}

Technical Paper Publication

Sepehr Hosseinkhani - The Ohio State University

Nick Jannot - The Ohio State University

Jeffrey Bons - The Ohio State University

Ryan Lundgreen - Pratt & Whitney

05-04: Thermal Measurements

6/17/2025

8:00 AM to 10:00 AM - LL10

Chair: **Anastasia Thomas** -

Chair: **Lubomir Ribarov** - **U.S. Merchant Marine Academy**

Presentations:

Endoscopic Imaging Enhancement for In-Situ Diagnostics of Irreversible Thermochromic Paints in High Pressure Turbines, {GT2025-152462}

Technical Paper Publication

Robert Kossakowski - Rolls-Royce

Dahn Wunderlich - Rolls-Royce

Benjamin Endrulat - Technische Universität Dresden

Stefan Gier - Rolls-Royce

Matthias Voigt - Technische Universität Dresden

Ronald Mailach - Technische Universität Dresden

Projection Method for Irreversible Thermochromic Paint Post-Processing Using Endoscope Images on Turbine Blade Surfaces, {GT2025-152930}

Technical Paper Publication

Benjamin Endrulat - Technische Universität Dresden

Md Tarekul Islam - Technische Universität Dresden

Matthias Voigt - Technische Universität Dresden

Robert Kossakowski - Rolls-Royce

Ronald Mailach - Technische Universität Dresden

Stefan Gier - Rolls-Royce

Borescope for Infrared Thermography of Turbine Guide Vanes During Operation, {GT2025-151304}

Technical Paper Publication

Daniel Kroniger - Kawasaki Heavy Industries, Ltd.

Kunio Okada - Kawasaki Heavy Industries, Ltd.

Takeshi Horiuchi - Kawasaki Heavy Industries, Ltd.

Mizuki Doi - Kawasaki Heavy Industries, Ltd.

Hiromitsu Arai - Kawasaki Heavy Industries, Ltd.

Atsushi Horikawa - Kawasaki Heavy Industries, Ltd.

Tomoki Taniguchi - Kawasaki Heavy Industries, Ltd.

Ryozo Tanaka - Kawasaki Heavy Industries, Ltd.

Karsten Kusterer - B&B-AGEMA GmbH

André Henders - B&B-AGEMA GmbH

Optimal Sensor Placement for LDA Measurement and Health Monitoring in a Recursive H₂ Combustion, {GT2025-153560}

Technical Paper Publication

Arno Fallast - FH JOANNEUM GmbH, University of Applied Sciences, Institute of Aviation

Lukas Andracher - FH JOANNEUM University of Applied Sciences, Institute of Aviation

Fabrice Giuliani - Combustion Bay One e.U.

Nina Paulitsch - Combustion Bay One e.U.

Andrea Hofer - Combustion Bay One e.U.

06-12 Innovations in Power & Propulsion Cycles

6/17/2025

8:00 AM to 10:00 AM - 112

Chair: **Ioannis Roumeliotis** - **Cranfield University**

Chair: **Ward De Paepe** - **UMONS**

Chair: **Alessandro Sorce** - **Università degli Studi di Genova**

Chair: **Francesco Crespi** - **University of Sevilla**

Chair: **Angelos Gaitanis** -

Presentations:

Optimizing Multi-Architecture Gas Turbine Design Employing a 3-Stream Joule-Humphrey Cycle for Cleaner Propulsion, {GT2025-153757}

Technical Paper Publication

Carlos Avila Catalan - Universidad Rey Juan Carlos

Jorge Saavedra - Universidad Rey Juan Carlos

Luis Cadarso - Universidad Rey Juan Carlos

Energy and Exergy Analysis of the Strayton Generator Quad Configuration for Performance Optimization, {GT2025-151501}

Technical Paper Publication

Chloe Amoroso - Cleveland State University

Maryam Younessi - Cleveland State University

Fusion Power Sensitivity Analysis and Thermodynamic Cycle Selection, {GT2025-153313}

Technical Paper Publication

Chris Clements - Tokamak Energy

Yi Hui Loh - Tokamak Energy

Emre Yildirim - Tokamak Energy

Challenges in Harnessing Power From Fusion, {GT2025-152739}

Technical Paper Publication

Yi Hui Loh - Tokamak Energy

Chris Clements - Tokamak Energy

Emre Yildirim - Tokamak Energy

30-10 Component Design and Testing

6/17/2025

8:00 AM to 10:00 AM - LL5

Chair: **Timothy Allison - Southwest Research Institute**

Chair: **Joshua Warren - Southwest Research Institute**

Chair: **Dhinesh Thanganadar - UKAEA**

Presentations:

Lessons Learned With Valve Design, Commissioning, and Testing at the STEP 10 MWe sCO₂ Facility, {GT2025-154214}

Technical Paper Publication

George Khawly - SOUTHWEST RESEARCH INSTITUTE

Joshua Warren - Southwest Research Institute

J. Jeffrey Moore - Southwest Research Institute

Brian Moreland - Southwest Research Institute

Lessons Learned in Pressure and Flow Measurement of SCO₂ Systems From the STEP Demo Facility, {GT2025-152229}

Technical Paper Publication

Craig Nolen - Southwest Research Institute

George Khawly - Southwest Research Institute

Experimental Analysis of Advanced Turbine for Supercritical CO₂ Power Cycle, {GT2025-154158}

Technical Paper Publication

Logan Tuite - Purdue University

Michael Butzen - Purdue University

Guillermo Paniagua - Purdue University

Inventory Management and Control Options for Transient Operation of sCO₂ Brayton Cycles, {GT2025-153599}
Technical Paper Publication
Shrey Sahai Gupta - Indian Institute of Science, Bangalore
Pramod Kumar - Indian Institute of Science, Bangalore
Pramodchandra Gopi - Triveni Turbines Limited

Poster Session

6/17/2025

12:00 PM to 1:30 PM - Exhibit Hall

Presentations:

Effect of U-Shaped Pedestal on Overall Cooling Effectiveness in Double Wall Impingement/effusion Cooling, {GT2025-151743}

Student Poster Presentation

Yumin Kim - Yonsei University
Gyeongryun Kim - Yonsei University
Hee Jae Lee - Yonsei University
Jeonghun Heo - Yonsei University
Hyung Hee Cho - Yonsei University

Characterization of a Toroidal Jet-Stirred Reactor for Ammonia/hydrogen Combustion at Jet Engine Conditions, {GT2025-152785}

Student Poster Presentation

Guillermo Barrios Cadenas - University of Central Florida
Oli Marquez Valenzuela - University of Central Florida
Marzuqa Ahmed - University of Central Florida
Amanda Maia - University of Central Florida
Gihun Kim - University of Central Florida
Ramees Khaleel Rahman - University of Central Florida
Subith Vasu Sumathi - University of Central Florida

Overall Cooling Effectiveness of Internally Cooled Additively Manufactured Blades, {GT2025-161898}

Student Poster Presentation

Rachel Ross - Pennsylvania State University
Matthew Krull - Pennsylvania State University
Stephen Lynch - Pennsylvania State University
Matthew Searle - National Energy Technology Laboratory, Department of Energy
Forrest Ames - National Energy Technology Laboratory, Department of Energy
Douglas Straub - National Energy Technology Laboratory, Department of Energy

Zero-Dimensional Aeroderivative Turbine Model for Alternative Fuel Analysis Aboard Ddg Class Ships, {GT2025-161907}

Student Poster Presentation

Tyler Wyka - George Washington University

Design of a Fuel Storage and Delivery System for Ammonia-Powered Turbofan Engines, {GT2025-161909}

Student Poster Presentation

Ethan Taylor - University of Central Florida
Marcel Otto - University of Central Florida
Jayanta Kapat - University of Central Florida
Erik Fernandez - University of Central Florida
Mahmoud El Soeuidan - University of Central Florida

Acoustic Cavitation Detection in a Centrifugal Pump Outlet, {GT2025-161992}

Student Poster Presentation

Anthony Martin - Valparaiso University

Julia Radcliffe - Valparaiso University
Shahin Nudehi - Valparaiso University

Increasing the Energy Efficiency of Cnc Machining by Optimizing the Tool Path, {GT2025-162197}

Student Poster Presentation

Tesfay Abreha Berhe - Budapest University of Technology and Economics

Numerical and Cfd Analysis on Innovative Hybrid Seal Designs for Optimized Performance in Supercritical Co₂ Turbomachinery, {GT2025-162412}

Student Poster Presentation

Ghanshyam Sarobar Mandal - UNIVERSITY OF CENTRAL FLORIDA

Al-Muthanna Al-Ani - University of Central Florida

Marcel Otto - University of Central Florida

Erik Fernandez - University of Central Florida

Jayanta Kapat - University of Central Florida

Exploring E-Ring Sealing Performance in Aerospace Duct Systems, {GT2025-162611}

Student Poster Presentation

Aaron Cecil - Technetics Group

Stefan Roeseler - Technetics Group

Ryan Plessinger - Technetics Group

Jonathan Kweder - Technetics Group

Heat Transfer Augmentation at Hp Turbine Ngv Leading Edge With Sweeping Jet Film Cooling, {GT2025-162635}

Student Poster Presentation

Hitesh Sharma - Indian Institute of Technology Kharagpur

Arnab Roy - Indian Institute of Technology Kharagpur

Chetan Mistry - Indian Institute of Technology Kharagpur

Erosion and Deposition Comparison of Biochar, Pumice, and Arizona Test Dust on Titanium Coupons, {GT2025-162724}

Student Poster Presentation

Menwa Besheer - Virginia Tech

Kristin Eickelbeck - Virginia Tech

Kiara Kulkarni - Virginia Tech

Chris Morgan - Virginia Tech

Matthew Morrison - Virginia Tech

Katherine Tyler - Virginia Tech

Investigating the Performance of Additively Manufactured Channels in Laminar Flows, {GT2025-162742}

Student Poster Presentation

Abigail Altland - Pennsylvania State University

Stephen Lynch - Pennsylvania State University

Karen Thole - Pennsylvania State University

Robert Pearson - Lockheed Martin

Kevin Birchenough - Lockheed Martin

Species Measurements Inside a Toroidal Jet Stirred Reactor at Aircraft Gas Turbine Operating Conditions, {GT2025-155103}

Student Poster Presentation

Marzuqa Ahmed - University of Central Florida

Amanda Maia - UCF

Oli Marquez Valenzuela - UCF

Guillermo Barrios Cadenas - UCF

Avril Elmer-Santiago - UCF

Ramees K. Rahman - UCF

Subith Vasu - UCF

Development of a Test Cell for Ammonia Combustion in an Aircraft Turbojet Engine, {GT2025-162756}

Student Poster Presentation

David Zamora - University of Central Florida
Christopher Loving - University of Central Florida
Justin Urso - University of Central Florida
Erik Fernandez - University of Central Florida
Marcel Otto - University of Central Florida
Jayanta Kapat - University of Central Florida
Subith Vasu - University of Central Florida

Fundamental Thermodynamic Insights on Compressor Train Design for Indirect-Heating Solar D-Caes, {GT2025-162804}

Student Poster Presentation

Pablo Rodríguez-Deaerriba - University of Seville
María-Dolores Quirós-Gotarredona - University of Seville
Francesco Crespi - University of Seville
David Sánchez - University of Seville

Aerothermal Design and Meta-Model Assisted Optimization of High-Speed Drive Turbine, {GT2025-162857}

Student Poster Presentation

Rejish Lal Johnson - Von Karman Institute for Fluid Dynamics
Nikolaos Rafail Lotsios - von Karman Institute for Fluid Dynamics
Mike Bonheure - Ghent University
Johan Prinsier - Von Karman Institute for Fluid Dynamics
Mohamed Hassanine Aissa - Von Karman Institute for Fluid Dynamics
Kevin M. Van Geem - Ghent University
Tom Verstraete - Von Karman Institute for Fluid Dynamics

Uncertainty Evaluation of Thermal History Coatings Up to 1600 °C, {GT2025-162861}

Student Poster Presentation

Joseph Counte - Sensor Coating Systems Ltd. , University of Nottingham
Silvia Araguas-Rodriguez - Sensor Coating Systems Ltd.
Solon Karagiannopoulos - Sensor Coating Systems Ltd.
Tanvir Hussain - Faculty of Engineering, University of Nottingham
Jörg P. Feist - Sensor Coating Systems Ltd.

High-Pressure Laser Absorption Measurements and Combustion Chemical Kinetic Modeling of Natural Gas/ammonia/hydrogen, {GT2025-162873}

Student Poster Presentation

Michael Pierro - University of Central Florida
Justin Urso - University of Central Florida
Ramees Rahman - University of Central Florida
Subith Vasu - University of Central Florida

Revamping of a High-Speed Rotordynamic Test Rig for Cryogenic Hydrostatic Bearings, {GT2025-162878}

Student Poster Presentation

Kyuman Kim - Hanyang University
Keun Ryu - Hanyang University

Influence of Dimensional Tolerances on Additively Manufactured Hybrid Thrust Bearing Performance, {GT2025-162885}

Student Poster Presentation

Homin Lim - Hanyang University
Keun Ryu - Hanyang University

Diffuser Integration With a Rotating Detonation Combustor for Power Generating Gas Turbines, {GT2025-162889}

Student Poster Presentation

Shaon Talukdar - The University of Alabama
Apurav Gupta - The University of Alabama
Ajay Agrawal - The University of Alabama

Effect of Plugged Orifices on Hybrid Journal Bearing Performance in Rocket Engine Turbopumps, {GT2025-162890}

Student Poster Presentation

Hyunsung Jung - Hanyang University

Keun Ryu - Hanyang University

Investigation of Oxidation Behavior of Spark Plasma Sintered Tungsten Alloys for High Temperature Thermal Management Systems, {GT2025-162900}

Student Poster Presentation

Abhilash M. Prasad - CATER - University of Central Florida

Md Shahjahan Hossain - COSMOS - University of Central Florida

Elena Torres - CATER - University of Central Florida

Marcel Otto - CATER - University of Central Florida

Ranajay Ghosh - CATER - University of Central Florida

Erik Fernandez - CATER - University of Central Florida

Zachariah Koyn - Energy Driven Technologies

Jayanta Kapat - CATER - University of Central Florida

Numerical and Experimental Study of In-Situ Sncr Reaction in Conceptual Design Burner, {GT2025-157874}

Student Poster Presentation

Jonghyun Kim - Chosun Univeristy

Minhyeok Kim - Chosun University

Jungsoo Park - Chosun Univeristy

Comparison of Predicted and Measured Combustor-Relevant Flow Fields, {GT2025-162902}

Student Poster Presentation

Chad B. Schaeffer - The Pennsylvania State University

Michael D. Barringer - The Pennsylvania State University

Stephen P. Lynch - The Pennsylvania State University

Karen A. Thole - The Pennsylvania State University

Past and Present of Fuel Handling Systems in Aviation and the Impact of Ammonia in Its Future., {GT2025-162907}

Student Poster Presentation

Arianna De La Paz - University of Central Florida

Jayanta Kapat - University of Central Florida

Reactor Designs for Onboard Ammonia Cracking in Aircraft Applications, {GT2025-162908}

Student Poster Presentation

Mairah Ahmed - UCF

Marcel Otto - UCF

Jayanta Kapat - UCF

High-Fidelity Numerical Analysis of Ammonia Cracking in Tubular Reactors With Plug Flow Reactor as a Benchmark for Performance Assessment for Sustainable Aviation, {GT2025-162913}

Student Poster Presentation

Andrew Menendez - University of Central Florida

Erik Fernandez - University of Central Florida

Marcel Otto - University of Central Florida

Jayanta Kapat - University of Central Florida

Impact of Extended Surfaces in an Ammonia Decomposition Reactor for a Sustainable Turbofan, {GT2025-162929}

Student Poster Presentation

Benjamin Turner - University of Central Florida

Matthew Dearolph - University of Central Florida

Andrew Menendez - University of Central Florida

Erik Fernandez - University of Central Florida

Marcel Otto - University of Central Florida

Jayanta Kapat - University of Central Florida

Developing a Micro-Hardness Database for Nonstandard Thin-Walled Metallic Parts and Coatings, {GT2025-162930}

Student Poster Presentation

Becca Jones - Technetics Group

Erin Volpe - Technetics Group

Jonathan Kweder - Technetics Group

Modeling of Heat Transfer Coefficients and Design of Boiler Heat Exchanger in an Ammonia Aircraft Fuel System Using Supercritical Carbon Dioxide Waste Heat Recovery, {GT2025-163077}

Student Poster Presentation

Alejandro Moreno - University of Central Florida

Claire-Phonie Bury - University Of Central Florida

Marcel Otto - UCF Cater

Erik Fernandez - UCF Cater

Jayanta Kapat - UCF Cater

Generic Design of a Sequential Combustion System for H₂ / NH₃ Gas Turbines, {GT2025-163447}

Student Poster Presentation

Christian Goßrau - RWTH Aachen University (IKDG)

Jonathan Sternfeld - RWTH Aachen University (IKDG)

Manfred Wirsum - RWTH Aachen University (IKDG)

Experimental Investigation on Thermohydraulic Performance of Additively Manufactured Rib Turbulators, {GT2025-158555}

Student Poster Presentation

Winfield Horning - The Pennsylvania State University

Stephen Lynch - The Pennsylvania State University

Karen Thole - The Pennsylvania State University

Development of an Adjoint Optimization System for Improvement of Turbine Cooling Passages, {GT2025-159134}

Student Poster Presentation

Tammy Nguyen-Huynh - The Ohio State University

Randall Mathison - The Ohio State University

Development of All-Oxide CMC With 3d Braided Fiber Reinforcements for Hot Gas Components, {GT2025-159433}

Student Poster Presentation

Fabian Jung - Institut für Textiltechnik of RWTH Aachen University

Jonathan Wüllner - Institut fuer Textiltechnik of RWTH Aachen University

Static and Dynamic Performance Optimization of Hydrodynamic Herringbone Micro-Grooved Journal Bearing Using Artificial Intelligence Approach, {GT2025-160044}

Student Poster Presentation

HARA PRAKASH MISHRA - National Institute of Technology, Rourkela

Suraj Kumar Behera - National Institute of Technology, Rourkela

Design and Commissioning of a High-Speed (120,000 Rpm) Hysteresis and Power Loss Test Rig for Air Foil Journal Bearings, {GT2025-160096}

Student Poster Presentation

David Braxmaier - Robert Bosch GmbH

Felix Foerster - Robert Bosch GmbH

The Benefits of Selecting Anisotropy Resolving Turbulence Models for Predicting Flow in Highly-Bent Serpentine Aircraft Intakes, {GT2025-160468}

Student Poster Presentation

Sean Hanrahan - The University of Melbourne

Julian Scheibel - Institute of Jet Propulsion, University of the Bundeswehr Munich

Andreas Grois - Institute of Jet Propulsion, University of the Bundeswehr Munich

Marcel Stöbel - Institute of Jet Propulsion, University of the Bundeswehr Munich

Melissa Kozul - The University of Melbourne

Suad Jakirlić - Institute for Fluid Mechanics and Aerodynamics, Technical University of Darmstadt

Dragan Kožulović - Institute of Jet Propulsion, University of the Bundeswehr Munich
Richard Sandberg - Department of Mechanical Engineering, The University of Melbourne

31-04 Endwall, Leakage, & Tip Flows

6/17/2025

1:30 PM to 3:30 PM - LL1

Chair: **Lisa Brilliant - Pratt & Whitney**

Chair: **Daniel Wilkin II - GE Aerospace**

Chair: **Sam D. Grimshaw - University of Cambridge**

Chair: **Ryosuke Seki - MHI**

Presentations:

Predicting Endwall Corner Separation in Compressor Cascades Using RANS: Influence of Transition Treatment and Inflow Conditions, {GT2025-153138}

Technical Paper Publication

Pascal Franke - Leibniz University Hannover

Dominik Suchla - Leibniz University Hannover

Xavier Ottavy - Ecole Centrale de Lyon, INSA Lyon, LMFA - UMR 5509

Dajan Mimic - Leibniz University Hannover

Lars Wein - Leibniz University Hannover

Study on the Loss Characteristics and Flow Mechanism of Cantilevered Cascade With Moving Endwall Under the Influence of Upstream Wake, {GT2025-152941}

Technical Paper Publication

Caiyan Chen - Shanghai Jiao Tong University

Mingmin Zhu - Shanghai Jiao Tong University

Xiao He - Shanghai Jiao Tong University

Haoda Shi - Shanghai Jiao Tong University

Hefang Deng - Shanghai Jiao Tong University

Jinfang Teng - Shanghai Jiao Tong University

Xiaoqing Qiang - Shanghai Jiao Tong University

Controlling the Secondary Flows in a Modern Aero-Engine Fan Using Vortex Generators, {GT2025-152428}

Technical Paper Publication

Roberto Putzu - Department of Mechanical, Chemical and Materials Engineering, University of Cagliari

Mario Carta - Department of Mechanical, Chemical and Materials Engineering, University of Cagliari

Tiziano Ghisu - Department of Mechanical, Chemical and Materials Engineering, University of Cagliari

Shahrokh Shahpar - Rolls-Royce plc

Anastasios Kovanis - Rolls-Royce plc

Effectiveness of Bowed Blade on Suppression of Corner Separation in Linear Compressor Cascade Demonstrated by DES, {GT2025-153058}

Technical Paper Publication

Masanao Kaneko - Tokyo Denki University

Hoshio Tsujita - Hosei University

12-05: Film Cooling in a High Free Stream Mn Flow

6/17/2025

1:30 PM to 3:30 PM - LL6

Chair: **Jens Fridh -**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Ardeshir Riahi** -

Chair: **Carl Sangan** - *University of Bath*

Chair: **Lin Ye** - *Northwestern Polytechnical University*

Presentations:

Adiabatic Effectiveness Measurements of Film Cooling in Supersonic Flow, {GT2025-152900}

Technical Paper Publication

Umberto Sandri - University of Florence

Marc D. Polanka - Air Force Institute of Technology

Alessio Picchi - University of Florence

Antonio Anreini - University of Florence

Bruno Facchini - University of Florence

Experimental Investigation of Mach Number Effect on Overall Cooling Effectiveness for a Transonic Vane, {GT2025-153929}

Technical Paper Publication

Matthew Krull - The Pennsylvania State University

Stephen Lynch - The Pennsylvania State University

Evaluation of Manufacturing Variability on Adiabatic Effectiveness of True Scale Film Cooling, {GT2025-154100}

Technical Paper Publication

Tyler Cannon-Jenkins - Pennsylvania State University

Stephen Lynch - Pennsylvania State University

Matthew Krull - Pennsylvania State University

Dominic Mongillo - Pratt & Whitney

Robin Prenter - Pratt & Whitney

Elevated Mainstream Mach Number Effects on Shaped Gas Turbine Film Cooling Holes, {GT2025-154302}

Technical Paper Publication

Michael Furgeson - The University of Texas at Austin

Elise Flachs - The University of Texas at Austin

David Bogard - The University of Texas at Austin

34-04 Computing architectures and solvers

6/17/2025

1:30 PM to 3:30 PM - LL2

Chair: **Jeff Defoe** -

Chair: **Sunil Patil** -

Chair: **Richard Hollenbach** -

Presentations:

Towards Quantum Computing for Turbomachinery CFD: Advancing Periodic Flow Simulations With Simplified Transport Equations, {GT2025-151210}

Technical Paper Publication

Gonçalo Das Neves Carneiro - von Karman Institute for Fluid Dynamics

Loïc Dewitte - Oxford Thermofluids Institute

Jérémie Roland - QuIC, École Polytechnique de Bruxelles, Université libre de Bruxelles,

Wim Munters - von Karman Institute for Fluid Dynamics

Frank Eulitz - von Karman Institute for Fluid Dynamics

Numerical Design of Experiments for Repeating Low-Pressure Turbine Stages Part I: Computational Opportunities and Methodology, {GT2025-152583}

Technical Paper Publication

Marco Rosenzweig - The University of Melbourne

Melissa Kozul - The University of Melbourne

Richard Sandberg - The University of Melbourne
Giovanni Giannini - The University of Florence
Roberto Pacciani - The University of Florence
Michele Marconcini - The University of Florence
Andrea Arnone - The University of Florence

Development of an Unstructured Multi-Stage Turbomachinery CFD Solver for Aerodynamic Investigations on Detailed Geometry, {GT2025-153604}

Technical Paper Publication

Atsushi Tateishi - IHI Corporation
Takashi Goto - IHI Corporation
Naoki Tani - IHI Corporation

Numerical Design of Experiments for Repeating Low-Pressure Turbine Stages Part II: Effect of Reynolds Number on Different Blade Geometries, {GT2025-153512}

Technical Paper Publication

Marco Rosenzweig - The University of Melbourne
Melissa Kozul - The University of Melbourne
Richard Sandberg - The University of Melbourne
Giovanni Giannini - The University of Florence
Roberto Pacciani - The University of Florence
Michele Marconcini - The University of Florence
Andrea Arnone - The University of Florence
Ennio Spano - Avio Aero
Francesco Bertini - Avio Aero

04-14 Combustor Design II

6/17/2025

1:30 PM to 3:30 PM - 108

Chair: **Samir Rida -**

Chair: **David Noble - EPRI**

Chair: **Michael Hughes - GE Vernova**

Chair: **Sandeep Jella - Siemens Energy**

Presentations:

Co-Firing Hydrogen With Natural Gas for 9 MW Siemens Energy Dry Low Emissions Combustor: Part I – High Pressure Rig Test, {GT2025-152870}

Technical Paper Publication

Kexin Liu - Siemens Energy Industrial Turbomachinery Ltd
Suresh Sadasivuni - Siemens Energy Industrial Turbomachinery Ltd
Jadeed Beita - Siemens Energy Industrial Turbomachinery Ltd

Coupling Micro-Mixing Combustion With a Pre-Reactor Operating Under Ultra-Rich Conditions for Low-NO_x Combustion of Hydrocarbons, {GT2025-152946}

Technical Paper Publication

Xavier Bellavance - Université de Sherbrooke
Alexandre Landry-Blais - Université de Sherbrooke
Jean-Sébastien Plante - Université de Sherbrooke
Mathieu Picard - Université de Sherbrooke

Numerical Investigation of Vertical Spacing Effects on Flame Behaviour and NO_x Emissions in Hydrogen Micromix Injector Pairs, {GT2025-152950}

Technical Paper Publication

Guillermo González López - Cranfield University
Gaurav Singh - Cranfield University

Vishal Sethi - Cranfield University
David Cadrecha Robles - ITP Aero
Pedro Romero Vega - ITP Aero

27-03: Bearings Effects in Rotordynamics

6/17/2025

1:30 PM to 3:30 PM - 107 A/B

Chair: **Filippo Cangioli - Waukesha Bearings**

Chair: **Devesh Kumar - Boeing**

Chair: **Francesco D'ALESSANDRO - Safran Aircraft Engines**

Presentations:

Rigid Air Bearings With 3-Lobe Bore Geometry: Stability and Rotor Dynamics for High-Speed Turbosystems, {GT2025-152395}

Technical Paper Publication

Myra Bianca Mehlhose - Technical University of Darmstadt, Institute of Applied Dynamics

Pascal Zeise - Technical University of Darmstadt, Institute of Applied Dynamics

Bernhard Schweizer - Technical University of Darmstadt, Institute of Applied Dynamics

Integration of a Squeeze Film Damper in the Journal Bearing of a High-Speed Electric Motor, {GT2025-152732}

Technical Paper Publication

Christoph Weissbacher - Gleitlagertechnik Weissbacher GmbH

Martin Wieschalla - Innomatics GmbH

Kevin Bauer - Institut für Tribologie und Energiewandlungsmaschinen (ITR)

Hubert Schwarze - Institut für Tribologie und Energiewandlungsmaschinen (ITR)

Experimental Validation on Reverse Precession in Foil Gas Bearing Supported Turbomachinery, {GT2025-152932}

Technical Paper Publication

Ali Shakil - Collins Aerospace

Christopher Simpson - Collins Aerospace

Transient Response Analysis of High-Speed Rotor With Different Bearing Interface and Their Trade-Off, {GT2025-153065}

Technical Paper Publication

Parag Mathuria - Pratt & Whitney

Gregory Savela - Pratt and Whitney

04-23 Pressure Gain Combustion II

6/17/2025

1:30 PM to 3:30 PM - 110

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Joseph Meadows -**

Chair: **Don Ferguson - DOE NETL**

Presentations:

Influence of Mesh Parameters and Turbulence-Chemistry Interactions on Wave Mode Prediction in Rotating Detonation Engines, {GT2025-153932}

Technical Paper Publication

Shrikar Banagiri - Virginia Polytechnic Institute and State University

Piyush Raj - Virginia Polytechnic Institute and State University

Joseph Meadows - Virginia Polytechnic Institute and State University

Study of Enstrophy Dynamics During the Mode Transition in a Hydrogen Fueled Rotating Detonation Engine Combustor, {GT2025-154257}

Technical Paper Publication

Steven Thompson - University of Central Florida

Reetesh Ranjan - The University of Tennessee Chattanooga

Veeraraghava Raju Hasti - University of Central Florida

Effect of Film Cooling Hole Location on Flow Dynamics in a Rotating Detonation Combustor, {GT2025-152502}

Technical Paper Publication

Shreyas Ramanagar Sridhara - University of Florence

Marc D. Polanka - Air Force Institute of Technology

Myles D. Bohon - Technical University Berlin

Antonio Andreini - University of Florence

Experimental Analysis of Operating Frequency Enhancement and Pressure Characteristics in a Pulsed Detonation Combustor, {GT2025-152698}

Technical Paper Publication

Andrei Vlad Cojoclea - Romanian Research & Development Institute for Gas Turbines - COMOTI

Mihnea Gall - ROMANIAN RESEARCH AND DEVELOPMENT INSTITUTE FOR GAS TURBINES - COMOTI

Ionut Porumbel - Romanian Research & Development Institute for Gas Turbines - COMOTI

George Vrabie - Romanian Research & Development Institute for Gas Turbines - COMOTI

Tudor Cucuic - Moldova State University, Institute of Applied Physics

Daniel Eugeniu Crunteanu - National University of Science and Technology Polytechnic of Bucharest - Faculty of Aerospace Engineering

04-32 Combustion Experiments I

6/17/2025

1:30 PM to 3:30 PM - 109 A/B

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **David Wu -**

Chair: **Khawar J. Syed -**

Presentations:

Experimental Investigation of a Non-Premixed H₂/Air Swirled Flame at Elevated Pressure Using Optical Diagnostics, {GT2025-151547}

Technical Paper Publication

Yannick Touzeau - ONERA

Sylvain Petit - ONERA

Cornelia Irimiea - ONERA

Benjamin Blaisot - ONERA

Guillaume Pilla - ONERA

Ajmal Khan Mohamed - ONERA

Experimental Combustor Research in Sustainable Aviation Fuel at Rolls-Royce: Strategy, Achievements, and Outlook, {GT2025-151555}

Technical Paper Publication

Denise Ahrens - Rolls-Royce

Gregor Gebel - Rolls-Royce Deutschland

Rohit Singh Pathania - Rolls-Royce plc.

Chris Armit - Rolls-Royce plc.

Katja Löhnert - Rolls-Royce plc.

Carsten Clemen - Rolls-Royce Deutschland

Experimental Investigation of Recursive Sequential Combustion: Early Experimental Demonstration, Emission Analysis, and CFD Insights, {GT2025-151992}

Technical Paper Publication

Nina Paulitsch - Combustion Bay One e.U.

Fabrice Giuliani - Combustion Bay One e.U.

Andrea Hofer - Combustion Bay One e.U.

Arno Fallast - FH JOANNEUM GmbH, University of Applied Sciences , Institute of Aviation

Experimental Characterization of Loss Mechanism During Probe-Based NVPM Measurements, {GT2025-152406}

Technical Paper Publication

Lena Voigt - DLR Institute of Propulsion Technology

Thomas Behrendt - DLR Institute of Propulsion Technology

Bertram Janus - DLR Institute of Propulsion Technology

23-02 Gas Foil Bearings

6/17/2025

1:30 PM to 3:30 PM - 106

Chair: **Bonjin Koo** - -

Chair: **Jurg Schiffmann** -

Presentations:

Experimental Feasibility Study of Conical Gas Foil Bearings for Oil-Free, High-Speed Motors, {GT2025-152288}

Technical Paper Publication

Marian Sarrazin - Technische Universität Berlin

Robert Liebich - Technische Universität Berlin

Experimental Investigation of Structural Characteristics and Viscous Energy Dissipation in Multiple Cantilever Gas Foil Radial Bearings, {GT2025-153247}

Technical Paper Publication

Danish Rehman - MITIS SA

Michel Delanaye - Mitis SA

Rotor Dynamic of Bearing-Rotor System Supported by Gas Foil Bearing Under Two Housing Excitations: Random Vibration and Transient Impulse, {GT2025-153670}

Technical Paper Publication

Dake Sun - Xi'an Jiaotong University

Zhuocong Li - Xi'an Jiaotong University

Zhigang Li - Xi'an Jiaotong University

Jun Li - Xi'an Jiaotong University

Development of Nonlinear Bump Stiffness Model and its Effect on Structural Stiffness and Nonlinear Rotordynamic Characteristic, {GT2025-151491}

Technical Paper Publication

Woongeon Lee - University of Texas at Arlington

Ehiremen Ebewe - The University of Texas at Arlington

Daejong Kim - The University of Texas at Arlington

36-03 Deep Learning based applications

6/17/2025

1:30 PM to 3:30 PM - LL3

Chair: **Marcus Meyer -**
Chair: **Lieven Baert - Cenaero**
Chair: **Astrid Walle - Siemens Energy**
Presentations:

C(NN)FD - Deep Learning Modelling of Multi-Stage Axial Compressors Aerodynamics, {GT2025-151295}
Technical Paper Publication

Giuseppe Bruni - Siemens Energy Industrial Turbomachinery Ltd
Sepehr Maleki - University of Lincoln
Senthil K. Krishnababu - Siemens Energy Industrial Turbomachinery Ltd

Reduced Order Modeling of the Unsteady Pressure on Turbine Rotor Blades Using Deep Learning, {GT2025-151476}
Technical Paper Publication

Joachim Dominique - Cenaero
Lionel Salesses - Cenaero
Jean-François Thomas - Cenaero
Lieven Baert - Cenaero
Tariq Benamara - Cenaero
Franck Mastrippolito - Safran Helicopter Engines
Theo Flament - Safran Helicopter Engines

Engineering Generative Adversarial Networks for Constrained and Multiobjective Problems, {GT2025-153107}
Technical Paper Publication

Ivan Voutchkov - Rolls-Royce Plc
Adele Nasti - Rolls-Royce Deutschland Ltd & Co KG
Andy Keane - University of Southampton

Multi-Data Format VAE Architectures for Engineering Design Exploration, {GT2025-153795}
Technical Paper Publication

Yasser Boughou - Rolls-Royce plc
Ivan I. Voutchkov - Rolls-Royce plc

22-01 Fan and LPT Flutter

6/17/2025

1:30 PM to 3:30 PM - 105

Chair: **Yoon Choi - GE Aerospace**
Chair: **Yujun Leng - Purdue University**
Chair: **Matthew Montgomery - Kratos FTT**
Presentations:

The INFra-Rig: Synchronous and Non-Synchronous Vibrations of an UHBR Fan at Clean and Crosswind Conditions, {GT2025-152836}

Technical Paper Publication

Jan Goessling - Leibniz University Hannover - TFD
Jonas Grubert - TU Braunschweig - IFAS
Patrick Brunow - TU Braunschweig - IFAS
Nick Gottschalk - TU Braunschweig - IFAS
Maximilian Mennicken - Institute of Propulsion Technology, German Aerospace Center (DLR)
Niklas Maroldt - Leibniz University Hannover - TFD
Jens Friedrichs - TU Braunschweig - IFAS

Fan Flutter at Mild Wind Conditions at Sea-Level-Static, {GT2025-153338}

Technical Paper Publication

Venkata y.t. Chennuru - Universidad Politécnica de Madrid
Roque Corral - Universidad Politécnica de Madrid

Fanzhou Zhao - Imperial College London
Salvador Rodríguez-Blanco - Universidad Politécnica de Madrid
Mehdi Vahdati - Universidad Politécnica de Madrid

A Parametric Study on the Influence of Acoustic Treatments in Fan Flutter, {GT2025-153705}

Technical Paper Publication

Javier González-Monge - Universidad Politécnica de Madrid
Roque Corral - Universidad Politécnica de Madrid
Mehdi Vahdati - Universidad Politécnica de Madrid

Conceptual Comparative Study of the Flutter Vibration Amplitude of Unstable Aeronautical Fans and Low-Pressure Turbines, {GT2025-153906}

Technical Paper Publication

Alvaro Escudero - Universidad Politécnica de Madrid
Salvador Rodríguez-Blanco - Universidad Politécnica de Madrid
Roque Corral - Universidad Politécnica de Madrid
Mehdi Vahdati - Universidad Politécnica de Madrid

01-07 Thermal Management Systems and Heat Exchangers

6/17/2025

1:30 PM to 3:30 PM - 111

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**

Chair: **Curtis Vedder - Honeywell**

Chair: **Vasilis G. Gkoutzamanis - Aristotle University of Thessaloniki**

Chair: **Charlene X. Hu - UTC Aerospace Systems**

Presentations:

Conceptual Design Exploration of Hydrogen Enhanced Intercooling for Future Aeroengines, {GT2025-152723}

Technical Paper Publication

Petter Miltén - Chalmers university of technology
Isak Jonsson - Chalmers university of technology
Anders Lundblad - GKN Aerospace Sweden
Carlos Xisto - Chalmers university of technology

Aero-Thermo Analysis of a Waste Heat Recovery Heat Exchanger, {GT2025-153194}

Technical Paper Publication

Isak Jonsson - Chalmers University of Technology
Jonas Bredberg - GKN Aerospace Sweden AB
Valentin Vikhorev - Chalmers University of Technology
Yasser Alrifai - GKN Aerospace Sweden AB
Jonathan Bergh - GKN Aerospace Sweden AB

Thermal Management System Modelling for Liquid Hydrogen-Fueled Hybrid Electric Aircraft, {GT2025-153593}

Technical Paper Publication

Georgios Koudounas - Aristotle University of Thessaloniki
Avinash Renuke - Malardalen University
Dimitrios Bermperis - Malardalen University
Hao Chen - Malardalen University
Jim Claesson - Modelon
Konstantinos Kyprianidis - Malardalen University

Fuel Cell Hybrid-Electric Aircraft Performance: Optimizing Thermal Management for Reduced Climate Impact, {GT2025-151328}

Technical Paper Publication

Marcus Wiegand - Technische Universität Dresden

Lukas Schuchard - Technische Universität Dresden
Simone Diego Lauro - Technische Universität Dresden
Martin Lange - Technische Universität Dresden
Ronald Mailach - Technische Universität Dresden

41-01 Small-scale Wind Turbines

6/17/2025

1:30 PM to 3:30 PM - LL10

Chair: **Giacomo Persico - Politecnico di Milano**

Chair: **Lorenzo Ferrari - University of Pisa**

Chair: **Alessandro Bianchini - Università degli studi di Firenze**

Presentations:

Investigation of the Synergetic Effect of Using J-Shaped Profile and Winglets in Single and Multiple Profile Blades of Small-Scale Horizontal Axis Wind Turbines, {GT2025-151213}

Technical Paper Publication

Saif Al Hamad - University of Wisconsin-Milwaukee
Mohamed Abousabae - University of Wisconsin-Milwaukee
Omar Shaker - University of Wisconsin-Milwaukee
Ryoichi S. Amano - University of Wisconsin-Milwaukee

Effects of Blade Number on Power Output in Kaplan Hydro Turbines, {GT2025-151576}

Technical Paper Publication

Kada Kada - University of Wisconsin-Milwaukee
Areej Khalil - University of Wisconsin-Milwaukee
Mohamed Abousabae - University of Wisconsin-Milwaukee
Cheikh Kada - University of Wisconsin-Milwaukee
Mohamed Maache - University of Wisconsin-Milwaukee
Ryo Amano - University of Wisconsin-Milwaukee

Experimental Performance Assessment of a Crossflow Turbine for Energy Generation From Moving Water, {GT2025-154235}

Technical Paper Publication

Mahmoud E. Abd El-Latief - Stevens Institute of Technology
Ahmed Shalaby - Stevens Institute of Technology
Ruben Paredes - Stevens Institute of Technology
Raju Datla - Stevens Institute of Technology
Muhammad Hajj - Stevens Institute of Technology

35-02 Component/Duct Interaction

6/17/2025

1:30 PM to 3:30 PM - LL4

Chair: **Daniela Anna Misul - Politecnico di Torino**

Chair: **Stefano Bianchi - Airbus**

Presentations:

Anomaly Detection Using Acoustic Measurement Data: Test Case of Diffuser Clogging on a Single-Stage Centrifugal Compressor, {GT2025-153150}

Technical Paper Publication

Nick Linnemann - University of Duisburg-Essen
Dieter Brillert - University of Duisburg-Essen

Large Eddy Simulation of the Cross-Talk Area Dynamics in a Can-Annular Gas Turbine, {GT2025-154019}

Technical Paper Publication

Christopher Bogaev - GE Vernova

Layal Hakim - GE Vernova

Sven Bethke - GE Vernova

Audrey Blondé - ETH Zürich

Bruno Schuermans - ETH Zürich

Nicolas Noiray - ETH Zürich

Optimization of Endwall Ridging for Enhanced Efficiency in Aggressive Turbine Vaned Ducts, {GT2025-153811}

Technical Paper Publication

Virginia Bologna - University of Genova

Daniele Petronio - Università degli Studi di Genova - DIME

Daniele Simoni - University of Genova

Francesca Satta - University of Genova

Luca De Vincentiis - Morfo Design

Filippo Rubechini - Morfo Design

Matteo Giovannini - Morfo Design

Simoni Paccati - Morfo Design

Francesco Bertini - Avio Aero

Andrea Notaristefano - Avio Aero

Interaction Between the TVF-LPT Hub Cavity With the Mainflow, {GT2025-152854}

Technical Paper Publication

Nicolas Krajnc - Graz University of Technology

Francesco Mangini - Graz University of Technology

Asim Hafizovic - Graz University of Technology

Wolfgang Sanz - Graz University of Technology

Robert Krewinkel - Graz University of Technology

Marios Patinios - GE Aerospace

Emil Göttlich - Graz University of Technology

09-03 Economic and market-related aspects of energy storage systems

6/17/2025

1:30 PM to 3:30 PM - 113

Chair: **David Sanchez - University of Seville**

Chair: **Stefano Barberis - University of Genova**

Presentations:

Development of a Power Generation and Economic Model for Micro-Grid Applications, {GT2025-153973}

Technical Paper Publication

Owen Pryor - Southwest Research Institute

Joshua Schmitt - Southwest Research Institute

Fernando Karg Bulnes - Southwest Research Institute

Douglas Hofer - Southwest Research Institute

Natalie Smith - Southwest Research Institute

Timothy Allison - Southwest Research Institute

Effect of the Tank Volume and Aspect Ratios on the Storage Capacity in Solid-State Hydrogen Storage: A Numerical Assessment, {GT2025-153962}

Technical Paper Publication

Costantino Barbieri - Polytechnic University of Bari

Michele Stefanizzi - Polytechnic University of Bari

Sergio Mario Camporeale - Polytechnic University of Bari

Marco Torresi - Polytechnic University of Bari

Financial Feasibility of Power-to-Hydrogen-to-Power Energy Storage Based on Gas Turbines: Case for Spain, {GT2025-154172}

Technical Paper Publication

Pablo Rodríguez-Debarra - University of Seville

Giuseppe Tilocca - University of Seville

Francesco Crespi - University of Seville

David Sánchez - University of Seville

Use of Performance Models for Powerplant Performance Testing, {GT2025-151178}

Technical Paper Publication

William Conlon - Pintail Power LLC

Milton Venetos - Wyatt LLC

Peter Pechtl - ENEXSA GmbH

06-08 mGT performance

6/17/2025

1:30 PM to 3:30 PM - 112

Chair: **Ioannis Roumeliotis - Cranfield University**

Chair: **Ward De Paepe - UMONS**

Chair: **Alessandro Sorce - Università degli Studi di Genova**

Chair: **Cedric Devriese - University of Mons**

Chair: **PAVLOS ROMPOKOS - CRANFIELD UNIVERSITY**

Presentations:

Liquid Hydrogen Storage System for Micro Gas Turbines: Dynamic Modelling and Performance With Variable Demand Profile, {GT2025-152917}

Technical Paper Publication

Swatara Tucker - University of Genoa

Matteo Passalacqua - University of Genoa

Alessandro Dotto - Fincantieri S.p.A. - DSCM

Alberto Traverso - University of Genoa

Giacomo Schiaffino - Fincantieri S.p.A. - DSCM

Dynamic Modeling and Experimental Insights in a 10 kWe Micro Gas Turbine Prototype: Experimental Validation and Testing, {GT2025-153032}

Technical Paper Publication

Aggelos Gaitanis - University of Mons (UMONS)

Martin Heylen - MITIS SA

Sophie Mullender - MITIS SA

Ward De Paepe - University of Mons (UMONS)

Experimental Characterization of a Micro Gas Turbine Fueled by Ammonia-Natural Gas Blends, {GT2025-153747}

Technical Paper Publication

Chiara Anfosso - University of Genoa

Daria Bellotti - University of Genoa

Mario Luigi Ferrari - University of Genoa

Loredana Magistri - University of Genoa

Experimental Identification of the Operability Limits in Exhaust Gas Recirculation Rates Under Transient Control for a Micro Gas Turbine, {GT2025-153281}

Technical Paper Publication

Vincent Thielens - University of Mons

Frederiek Demeyer - Engie R&I Laborelec

Klaus Peter Geigle - German Aerospace Center

*Peter Kutne - German Aerospace Center
Ward De Paepe - University of Mons*

30-11 System Testing

6/17/2025

1:30 PM to 3:30 PM - LL5

Chair: **Timothy Allison - Southwest Research Institute**

Chair: **Jonathan Wade - Southwest Research Institute**

Chair: **Rafael Guedez - KTH Stockholm**

Presentations:

STEP 10 MWe sCO₂ Turbine Simple Cycle Testing, {GT2025-153521}

Technical Paper Publication

Jeffrey Moore - Southwest Research Institute

John Klaerner - Southwest Research Institute

Jonathan Wade - Southwest Research Institute

Jason Mortzheim - GE Vernova Advanced Research

Sylvain Pierre - GE Vernova Advanced Research

Lessons Learned and Testing Philosophy for the Piping System of a sCO₂ Facility, {GT2025-154193}

Technical Paper Publication

Fernando Karg Bulnes - Southwest Research Institute

Mitchell Rhodes - Southwest Research Institute

George Khawly - Southwest Research Institute

Joshua Warren - Southwest Research Institute

Jeffrey Moore - Southwest Research Institute

Seth Cunningham - Southwest Research Institute

Jonathan Wade - Southwest Research Institute

Start-Up and Transient Operation Modelling of a Demo sCO₂ Recuperated Cycle, {GT2025-154101}

Technical Paper Publication

Simone Maccarini - University of Genoa

Swatara Tucker - University of Genoa

Luca Mantelli - University of Genoa

Alberto Traverso - University of Genoa

Extended Duration Operation of a Pilot-Scale Supercritical CO₂ Test Loop, {GT2025-152150}

Technical Paper Publication

Timothy Held - Echogen Power Systems

Kyle Sedlacko - Echogen Power Systems

Brett Bowan - Echogen Power Systems

Jason Miller - Echogen Power Systems

Vamshi Avadhanula - Echogen Power Systems

Andrew Fry - Brigham Young University

Brian Schooff - Brigham Young University

20-01: Compressor Operation and Process Design

6/17/2025

1:30 PM to 3:30 PM - 114

Chair: **Jason Wilkes - Southwest Research Institute**

Chair: **John Klaerner - SwRI**

Chair: **Alessandro Garofalo** -

Presentations:

Validation of Impeller-Diffuser Forced Response Excitations In Centrifugal Compressors, {GT2025-151700}

Technical Paper Publication

Anand Srinivasan - Solar Turbines

Daniel Silva - Solar Turbines

Marco Vagani - Solar Turbines

CFD Evaluation and Optimization of Oil Tank Fluid Dynamics For Turbomachinery Lubrication System, {GT2025-153925}

Technical Paper Publication

Gabriele Lucherini - Baker Hughes

Nicola Tammaro - Baker Hughes

Marco Fiesoli - Baker Hughes

Rajnish Kumar Singh - Baker Hughes

Integrally Geared Centrifugal Compressors: Control Methods, Applications and Process Control, {GT2025-151202}

Technical Paper Publication

Rainer Kurz - RKSBEnergy

Karl Wygant - Ebara Elliott Energy

Klaus Brun - Ebara Elliott Energy

LNG Applications for Turbomachinery, {GT2025-151226}

Technical Paper Publication

Rainer Kurz - RKSBEnergy

Klaus Brun - Ebara Elliott Energy Company

03-06 Innovations in Hydrogen and Ammonia-Based Propulsion Systems

6/17/2025

1:30 PM to 3:30 PM - 104

Chair: **Marcel Otto** -

Chair: **Angela Serra** - **Baker Hughes**

Chair: **Elena Torres** -

Presentations:

Supercritical CO₂ Waste Heat Recovery for Enhanced Efficiency in Ammonia Cracked Hydrogen Turbofan Engines, {GT2025-153002}

Technical Paper Publication

Kangana Patel - University of central florida

Mairah Ahmed - University of Central Florida

Erik Fernandez - University of central Florida

Marcel Otto - University of Central Florida

Jayanta Kapat - University of Central

Experimental Investigation of Large-Scale Hydrogen Diffusion Jet Flames, {GT2025-151483}

Technical Paper Publication

Christopher Bernardy - Bundesanstalt fuer Materialforschung und -pruefung

Abdel Karim Habib - Bundesanstalt fuer Materialforschung und -pruefung

Martin Kluge - Bundesanstalt fuer Materialforschung und -pruefung

Bernd Schallau - Bundesanstalt fuer Materialforschung und -pruefung

Hanjo Kant - Bundesanstalt fuer Materialforschung und -pruefung

Marcel Schulze - Bundesanstalt fuer Materialforschung und -pruefung

Alessandro Orchini - Chair of Nonlinear Thermo-Fluid Mechanics, Technical University of Berlin

Simulation Study of a Turbofan Engine With Ammonia As Energy Carrier, {GT2025-153011}

Technical Paper Publication

Mairah Ahmed - University of Central Florida

Kangana Patel - University of Central Florida

Andrew Menendez - University of Central Florida

Ghanshyam Sarobar Mandal - University of Central Florida

Marcel Otto - University of Central Florida

Jayanta Kapat - University of Central Florida

Laminar Burning Speed Measurements of DME-Hydrocarbon Mixtures, {GT2025-155051}

Technical Paper Publication

Ahmed Safdari - UCF

Louis Yovino - UCF

Gihun Kim - UCF

Ramees Khaleel Rahman - UCF

Subith Vasu - UCF

32-04 Loss and Performance

6/17/2025

4:00 PM to 5:30 PM - LL2

Chair: **Alex Stein - GE Aerospace**

Chair: **Emil Goettlich -**

Chair: **Andrea Notaristefano - GE Avio Aero**

Presentations:

An Improved Correlation for Turbine Endwall Loss, {GT2025-151998}

Technical Paper Publication

John Coull - University of Oxford

Transient 1D Loss Model for Predicting Supersonic Turbine Starting, {GT2025-152515}

Technical Paper Publication

Kevin Boes - Purdue

Lukas Inhestern - Purdue University

Guillermo Paniagua - Purdue University

A Loss Prediction Model for Manufacturing Variations on High-Pressure Turbine Blade Shroud Platforms, {GT2025-152007}

Technical Paper Publication

Bram Hulhoven - University of Cambridge

John Coull - University of Oxford

Dougal Jackson - Rolls-Royce plc

Nicholas Atkins - University of Cambridge

31-03 Compressor Inlet Distortion

6/17/2025

4:00 PM to 5:30 PM - LL1

Chair: **Lisa Brilliant - Pratt & Whitney**

Chair: **Daniel Wilkin II - GE Aerospace**

Chair: **Sean Nolan - Pratt & Whitney**

Chair: **Marc Kainz - Ansys**

Chair: **Matthew Meier - Penn State University**

Presentations:

Performance and Secondary Flow Structures Characterization in a Highly-Loaded Low-Pressure Compressor Under Distorted Inflow Conditions, {GT2025-153169}

Technical Paper Publication

Riccardo Toracchio - von Karman Institute for Fluid Dynamics

Koen Hillewaert - University of Liège

Fabrizio Fontaneto - von Karman Institute for Fluid Dynamics

Experimental and Numerical Characterization of the Performance of a Transonic Axial Compressor Subject to Inlet Distortion, {GT2025-152989}

Technical Paper Publication

Vincent Difilippo - University of Notre Dame

Andrew Oliva - University of Notre Dame

Aleksandar Jemcov - University of Notre Dame

Scott Morris - University of Notre Dame

Research on the Anti-Distortion Fan Stator Based on Aerodynamic Performance Analysis Under Inlet Distortion, {GT2025-151232}

Technical Paper Publication

Jie Bai - Key Laboratory of Civil Aircraft Airworthiness Technology Civil Aviation University of China

Junyang Yu - College of Safety Science and Engineering, Civil Aviation University of China

Peng Sun - School of Carbon Neutrality Science and Engineering, Anhui University of Science & Technology

Wenguang Fu - School of Mechanical Engineering, Dalian University

Tao Zhang - Beijing Institute of Power Machinery

Chunxue Wang - Beijing Institute of Power Machinery

Wei Zhao - Beijing Institute of Power Machinery

14-03: Internal Air System: Rim Seal, Clearances and Leakage Flow

6/17/2025

4:00 PM to 5:30 PM - LL6

Chair: **Alexander Mirzamoghadam - Northrop Grumman**

Chair: **Hui Tang - University of Bath**

Chair: **Michael D. Barringer - Penn State**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl M. Sangan -**

Chair: **Changmin Son - Virginia Tech**

Presentations:

A Co-Simulation Approach for Transient Thermal Clearance Analysis of a Gas Turbine Whole Engine Model, {GT2025-152208}

Technical Paper Publication

Hussein Daou - Maya HTT

Chris Barnes - Rolls-Royce plc

Jeff Medema - Rolls-Royce Corporation

Florian Sanchez - Maya HTT

Rim Seal Flow Analysis Through a Novel Technique in a Highly Instrumented Two Spool Rig, {GT2025-153118}

Technical Paper Publication

Francesco Mangini - Graz University of Technology

Marian Staggl - Graz University of Technology

Nicolas Krajnc - Graz University of Technology

Filippo Merli - Von Karman Institute for Fluid Dynamics

Asim Hafizovic - Graz University of Technology

Robert Krewinkel - Graz University of Technology

*Andreas Marn - Graz University of Technology
Emil Göttlich - Graz University of Technology*

Design Solutions for Decreasing Blade Tip Clearance Leakage Flow Using Thermomechanical Approach, {GT2025-153915}

Technical Paper Publication

*Güneş Ece Akalın Arıkan - TUSAS ENGINE INDUSTRIES (TEI), INC.
Ahmet Cihat Arıkan - TUSAS ENGINE INDUSTRIES (TEI), INC.
Hakan Emiralioğlu - TUSAS ENGINE INDUSTRIES (TEI), INC.
Erinç Erdem - TUSAS ENGINE INDUSTRIES (TEI), INC.
Bedir İnci - TUSAS ENGINE INDUSTRIES (TEI), INC.*

12-08: Film Cooling Under Engine Like Conditions

6/17/2025

4:00 PM to 5:30 PM - LL7

Chair: **Andrew Nix - West Virginia University**

Chair: **Ardeshtir Riahi -**

Chair: **Carl Sangan - University of Bath**

Chair: **Lamyaa El-Gabry -**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Michael D. Barringer - Penn State**

Presentations:

Suction Side Film Cooling Under Near-Engine Conditions: Influence of Sequential Addition of Film Cooling Rows on Cooling Performance, {GT2025-151664}

Technical Paper Publication

*Jan Lemmer - RWTH Aachen University
Yanik Kleine-Hollenhorst - RWTH Aachen University
Michael Rabs - MAN Energy Solutions SE
Peter Jeschke - RWTH Aachen University*

Development of Two-Color Pyrometer for Film Cooling and Transpiration Cooling at High Temperature Conditions, {GT2025-152615}

Technical Paper Publication

*Bo-Wei Chen - Department of Mechanical Engineering, National Yang Ming Chiao Tung University
Jing-Fa Chang - Department of Mechanical Engineering, National Yang Ming Chiao Tung University
Szu-Chi Huang - Department of Mechanical Engineering, National Yang Ming Chiao Tung University
Shih-Hsun Chen - Department of Mechanical Engineering, National Yang Ming Chiao Tung University
Yao-Hsien Liu - Department of Mechanical Engineering, National Yang Ming Chiao Tung University*

The Relative Effects of Internal Reynolds Number and Advective Capacity Ratio on the Coolant Warming Factor, {GT2025-152999}

Technical Paper Publication

*John Di Lella - Air Force Institute of Technology
Connor Wiese - Air Force Institute of Technology
James L. Rutledge - Air Force Institute of Technology*

27-02: Rotordynamic Design and Application

6/17/2025

4:00 PM to 5:30 PM - 107 A/B

Chair: **Filippo Cangioli - Waukesha Bearings**

Chair: **Steven Chatterton** -
Chair: **Phil Varney - Pratt & Whitney**
Presentations:

Robust Rotor Dynamic Design Evaluation of Turbine-Generators Integrating Sensitivity, Uncertainty, and Optimization, {GT2025-151415}

Technical Paper Publication

Athanasios Chasalevris - National Technical University of Athens

Ioannis Gavalas - National Technical University of Athens

Jerzy T Sawicki - Cleveland State University

The Future of Full Engine Dynamic Simulation for Gas Turbines, {GT2025-151665}

Technical Paper Publication

Robert Pietrzak - Baker Hughes

Lorenzo Naldi - Baker Hughes

Stefano Canavesi - Siemens

Caroline Raick - Siemens

Rotordynamics Optimization Using Different Population-Based Algorithms With Transfer Matrix Method, {GT2025-152090}

Technical Paper Publication

Hüseyin Tarık Niş - TUSAS Engine Industries Inc.

Ömer Faruk Kale - TUSAS Engine Industries

Ahmet Yıldız - Bursa Uludag University

04-37 Flashback and Blowoff

6/17/2025

4:00 PM to 5:30 PM - 108

Chair: **David Noble - EPRI**

Chair: **Samir Rida** -

Chair: **Luis Bravo** -

Chair: **Patrizio Vena** -

Chair: **Stefano Orsino** -

Presentations:

Characterization of Flashback and Flame-Holding in a Jet-in-Crossflow Mixing Configuration With Methane-Hydrogen Fuel Blends, {GT2025-151825}

Technical Paper Publication

Pradeep Parajuli - Leidos Inc./ National Energy Technology Laboratory

Peter Strakey - National Energy Technology Laboratory

The Control of Hydrogen-Air Ignition Dynamics to Prevent Flashback, {GT2025-152471}

Technical Paper Publication

Matteo Amerighi - University of Florence

Giada Senatori - University of Florence

Antonio Andreini - University of Florence

Investigation of Flashback Limits and Detection Strategies for Jet-Stabilized Hydrogen Flames, {GT2025-152906}

Technical Paper Publication

Philipp Maximilian Zur Nedden - Chair of Fluid Dynamics, Technische Universität Berlin, Germany

Oscar Luis Montagne - Chair of Fluid Dynamics, Technische Universität Berlin, Germany

Christoph Peisdersky - Chair of Fluid Dynamics, Technische Universität Berlin, Germany

Mattias Ettore Giulio Eck - Chair of Fluid Dynamics, Technische Universität Berlin, Germany

Finn Simon Lückhoff - Chair of Fluid Dynamics, Technische Universität Berlin, Germany

Alessandro Orchini - Chair of Nonlinear Thermo-Fluid Mechanics, Technische Universität Berlin, Germany

26-01 Probabilistic and Machine Learning Methods Development Applications

6/17/2025

4:00 PM to 5:30 PM - 106

Chair: **Jeffrey M. Brown - USAF**

Chair: **Kai Kadau - Siemens Energy Inc**

Chair: **Liping Wang - GE Aerospace Research**

Presentations:

AI-Powered Probabilistic Damage Tolerance Approach for Impeller Mechanical Assessment, {GT2025-151861}

Technical Paper Publication

Lorenzo Cappelli - Baker Hughes

Dario Matina - Baker Hughes

Leonardo Pulga - Baker Hughes

Andrea Panizza - Baker Hughes

Dynamic Contact Angle Modeling Using Bayesian Inference, {GT2025-153386}

Technical Paper Publication

Maryam Akram - Ford Motor Company

Michael Schigelone - Ford Motor Company

Wanjiao Liu - Ford Motor Company

Micromechanical Surrogate Machine Learning Model for Creep Deformation Modeling, {GT2025-154154}

Technical Paper Publication

Patxi Fernandez-Zelaia - Oak Ridge National Laboratory

Jason Mayeur - Oak Ridge National Laboratory

Jiahao Cheng - Oak Ridge National Laboratory

Yousub Lee - Oak Ridge National Laboratory

Kevin Knipe - Siemens Energy Inc

Kai Kadau - Siemens Energy

36-04 Sensitivity Analysis and Uncertainty Quantification

6/17/2025

4:00 PM to 5:30 PM - LL3

Chair: **Marcus Meyer -**

Chair: **Zhihui Li - University of Liverpool**

Chair: **David Liliedahl - Rolls-Royce**

Presentations:

Uncertainty Quantification Analysis of Turbine Parameters Based on Conjugate Heat Transfer Calculation, {GT2025-154265}

Technical Paper Publication

Hao Chen - Zhejiang University

Junying Wang - AECC Sichuan Gas Turbine Establishment

Kai Zhou - Zhejiang University

Jianping Yan - Zhejiang University

Maintenance of Jet Engines: Robust Parametrisation and Reconstruction of Compressor and Turbine Blades, {GT2025-151573}

Technical Paper Publication

Maximilian Dammann - Leibniz University Hannover, Institute of Turbomachinery and Fluid Dynamics
Benedikt Schulten - Technical University of Braunschweig, Institute of Jet Propulsion and Turbomachinery
Jan Goeing - Technical University of Braunschweig, Institute of Jet Propulsion and Turbomachinery
Maximilian Steiner - Lufthansa Technik
Max Koster - Lufthansa Technik
Jens Friedrichs - Technical University of Braunschweig, Institute of Jet Propulsion and Turbomachinery
Joerg R. Seume - Leibniz University Hannover, Institute of Turbomachinery and Fluid Dynamics
Lars Wein - Leibniz University Hannover, Institute of Turbomachinery and Fluid Dynamics

Aerothermal Design and Metamodel-Assisted Optimization of High-Speed Drive Turbine, {GT2025-153946}
Technical Paper Publication

Rejish Lal Johnson - Von Karman Institute for Fluid Dynamics
Nikolaos Rafail Lotsios - Von Karman Institute for Fluid Dynamics
Mike Bonheure - Ghent University
Johan Prinsier - Von Karman Institute for Fluid Dynamics
Mohamed Hassanine Aissa - Von Karman Institute for Fluid Dynamics
Kevin M. Van Geem - Ghent University
Tom Verstraete - Von Karman Institute for Fluid Dynamics

41-02 Wind Turbine Computational Studies

6/17/2025

4:00 PM to 5:30 PM - LL10

Chair: **Giacomo Persico - Politecnico di Milano**

Chair: **Lorenzo Ferrari - University of Pisa**

Chair: **Ryo Amano - University of Wisconsin-Milwaukee**

Presentations:

Wind Turbine Power Harvesting Control Through Active Fluid Gurney Flaps, {GT2025-153916}
Technical Paper Publication

Mario Lucas - Universidad Rey Juan Carlos
Jorge Saavedra - Universidad Rey Juan Carlos

Dynamic Analysis of Vertical Axis Wind Turbines Under Unsteady Wind Conditions Considering Inertial Effects, {GT2025-153798}

Technical Paper Publication

Sanshodhan Shende - Sapienza University of Rome
Lorenzo Tieghi - University of Trento
Alessandro Corsini - Sapienza University of Rome
Alessio Castorrini - Sapienza University of Rome

35-01 Compressor integration and duct interactions

6/17/2025

4:00 PM to 5:30 PM - LL4

Chair: **Anastasios Kovanis - Rolls-Royce**

Chair: **Stefano Bianchi - Airbus**

Presentations:

Highly Aggressive Inter Compressor Duct With Active Flow Control Part 2: Numerical Validation of Pulsed Jet Actuators With Unsteady Simulations, {GT2025-152898}

Technical Paper Publication

Stefan Fritz - German Aerospace Center Institute of Propulsion Technology

Felix Koppers - German Aerospace Center Institute of Propulsion Technology
Alexander Hergt - German Aerospace Center Institute of Propulsion Technology
David Bresemann - Technische Universität Berlin Institute of Aeronautics and Astronautics Chair of Aero Engines
Mario Eck - Technische Universität Berlin Institute of Aeronautics and Astronautics Chair of Aero Engines
Dieter Peitsch - Technische Universität Berlin Institute of Aeronautics and Astronautics Chair of Aero Engines
Felix M. Möller - German Aerospace Center (DLR) Institute of Test and Simulation for Gas Turbines
Roland Rückert - NAVASTO GmbH

Highly Aggressive Inter Compressor Duct With Active Flow Control Part I: Experimental Validation of Optimized Pulsed Jet Actuators, {GT2025-152899}
Technical Paper Publication

D. Bresemann - Technical University Berlin Institute of Aeronautics and Astronautics Chair of Aero Engines
S. Fritz - German Aerospace Center (DLR) Institute of Propulsion Technology
A. Hergt - German Aerospace Center (DLR) Institute of Propulsion Technology
M. Eck - Technische Universität Berlin Institute of Aeronautics and Astronautics Chair of Aero Engines
D. Peitsch - Technische Universität Berlin Institute of Aeronautics and Astronautics Chair of Aero Engines
R. Rückert - NAVASTO GmbH

Development of an Integrated Lifting Strut and Outlet Guide Vane in a Compressor Transition Duct, {GT2025-153564}
Technical Paper Publication

Ian Mariah - Loughborough University
Graham L. Peacock - Loughborough University
Jon F. Carrotte - Loughborough University
A Duncan Walker - Loughborough University
Chris Hall - Rolls-Royce plc.

04-39 Combustion Dynamics - Modeling II

6/17/2025

4:00 PM to 5:30 PM - 110

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Christopher Douglas -**

Chair: **Sourabh Shrivastava -**

Presentations:

Assessment of a Hybrid LES-CAA Method for Predicting Flame Responses in Swirl-Stabilized Combustion Under Various Acoustic Excitations, {GT2025-153278}

Technical Paper Publication

Florian Christoffer Uetrecht - Technical University of Darmstadt
Hanna Reinhardt - Technical University of Darmstadt
Clément Mocquard - Technical University of Munich
Çetin Ozan Alanyalıoğlu - Technical University of Darmstadt
Hendrik Nicolai - Technical University of Darmstadt
Christian Hasse - Technical University of Darmstadt

On the Generation of Entropy Waves in the Dilution Zone of a Rich-Quench-Lean Combustion Chamber, {GT2025-151492}

Technical Paper Publication

Thuy An Do - Technical University of Munich, Germany; TUM School of Engineering and Design, Department of Aerospace and Geodesy, Assistant Professorship of Sustainable Future Mobility
Angel Brito Gadeschi - Technical University of Munich, Germany; TUM School of Engineering and Design, Department of Aerospace and Geodesy, Assistant Professorship of Sustainable Future Mobility
Grégoire Varillon - Technical University of Munich, Germany; TUM School of Engineering and Design, Department of Engineering Physics and Computation, Associate Professorship of Thermo-Fluid Dynamics

Agnes Jocher - Technical University of Munich, Germany; TUM School of Engineering and Design, Department of Aerospace and Geodesy, Assistant Professorship of Sustainable Future Mobility

30-12/09-04 Joint Session: sCO₂ Heat Pumps

6/17/2025

4:00 PM to 5:30 PM - LL5

Chair: **Timothy Allison** - Southwest Research Institute

Chair: **David Sanchez** - University of Seville

Chair: **Ladislav Vesely** -

Chair: **Bob Mischo** - MAN Energy Solutions

Presentations:

Performance Test of a 9MW-Class 3-Stage Axial CO₂ Compressor, {GT2025-152754}

Technical Paper Publication

Jeongseek Kang - University of Notre Dame

Alex Vorobiev - University of Notre Dame

James Sutton - University of Notre Dame

William Stewart - University of Notre Dame

Harold Miller - University of Notre Dame

Joshua Cameron - University of Notre Dame

Scott Morris - University of Notre Dame

Mark Turner - University of Cincinnati

Kyle Sedlacko - Echogen Power Systems, DE

Timothy Held - Echogen Power Systems, DE

Experimental Investigation of Vapor Formation in Liquid CO₂ Flow Through a Converging-Diverging Nozzle, {GT2025-154157}

Technical Paper Publication

Cole Replogle - Southwest Research Institute

Kaitlyn Witt - Southwest Research Institute

Mark Anguiano - Southwest Research Institute

Subhra Shanka Koley - Southwest Research Institute

Natalie Smith - Southwest Research Institute

Design of a Multiphase CO₂ Turbine Test Facility, {GT2025-154034}

Technical Paper Publication

Natalie Smith - Southwest Research Institute

Cole Replogle - Southwest Research Institute

Reese Roddy - Southwest Research Institute

Colleen Mccandless - Southwest Research Institute

Zachary Brown - Southwest Research Institute

Doug Hofer - Southwest Research Institute

WEDNESDAY, 6/18/2025

13-05: Influence of manufacturing techniques on heat transfer

6/18/2025

8:00 AM to 10:00 AM - LL6

Chair: **Robert Krewinkel** -
Chair: **Silvia Ravelli** -
Chair: **Lesley Wright** - *Texas A&M University*
Chair: **Carl Sangan** - *University of Bath*
Chair: **Jeffrey Bons** - *The Ohio State University*
Chair: **Dong-Ho Rhee** -
Presentations:

Systematic Numerical Investigation on the Surface Roughness Effects on the Friction and Heat Transfer of Additively Manufactured Components, {GT2025-153016}

Technical Paper Publication

Niccolò Casini - *Ergon Research*
Sergio Machado - *Ergon Research*
Lorenzo Mazzei - *Ergon Research*
Riccardo Da Soghe - *Ergon Research*

Flow and Heat Transfer Characteristics of Additively Manufactured Mini Channels, {GT2025-153071}

Technical Paper Publication

Dimitrios Vrocharis - *University of New Mexico*
Georgios Koutsakis - *University of New Mexico*

Effect of Morphological Variations in TPMS Lattice Structures on Transpiration Cooling, {GT2025-151422}

Technical Paper Publication

Juchan Son - *University of Ottawa*
Patrick Richer - *University of Ottawa*
Bertrand Jodoin - *University of Ottawa*
Zekai Hong - *National Research Council of Canada*

Influence of Ceramic Matrix Composite Weave Topology on Turbine Vane Heat Transfer and Aerodynamic Losses, {GT2025-153070}

Technical Paper Publication

Ashrit Tayade - *Solar Turbines*
Stephen Lynch - *The Pennsylvania State University*

12-03: Film Cooling Computational Studies (I)

6/18/2025

8:00 AM to 10:00 AM - LL7

Chair: **Ardeshir Riahi** -
Chair: **Lamyaa El-Gabry** -
Chair: **Lesley Wright** - *Texas A&M University*
Chair: **Carl Sangan** - *University of Bath*
Chair: **Khosro Mollahosseini** -
Presentations:

Effect of Hydrogen Combustion on Film Cooling Characteristics in Gas Turbines, {GT2025-153185}

Technical Paper Publication

Yoonhyeong Jeong - *Korea University*
Duy-Tan Vo - *Korea University*
Jaiyoung Ryu - *Korea University*

Turbine Tip Film Cooling With Fanned Holes, {GT2025-152693}

Technical Paper Publication

Maximilian Farfaras - *University of Oxford*
Macdonald Mutekwa - *University of Oxford*

Joao Vieira - Rolls-Royce plc
John Coull - University of Oxford

Multiscale Data-Driven RANS Closure for Trailing Edge Cutback Film Cooling Flows, {GT2025-151761}
Technical Paper Publication

Xiao He - Shanghai Jiao Tong University
Francesco Montomoli - Imperial College London
Vittorio Michelassi - Baker Hughes
Andrea Panizza - Baker Hughes
Leonardo Pulga - Baker Hughes

31-09 Fan Inlet Distortion II

6/18/2025

8:00 AM to 10:00 AM - LL1

Chair: **Lisa Brilliant - Pratt & Whitney**

Chair: **Daniel Wilkin II - GE Aerospace**

Chair: **Tim Schneider - MTU Aero Engines AG**

Chair: **Scott Morris -**

Chair: **Matthew Ha - University of California**

Chair: **Joshua Cameron - University of Notre Dame**

Presentations:

A Three-Dimensional Actuator Disk Model for Fan Response to Inlet Distortion: Part I – Formulation, {GT2025-151355}

Technical Paper Publication

Dilip Prasad - Gulfstream Aerospace Corporation

A Three-Dimensional Actuator Disk Model for Fan Response to Inlet Distortion: Part II – Applications, {GT2025-151356}

Technical Paper Publication

Dilip Prasad - Gulfstream Aerospace Corporation

Mitigation of Circumferential Inlet Distortion Effects Using Non-Axisymmetric Fan Inlet and Exit Guide Vanes, {GT2025-152053}

Technical Paper Publication

Michael Kramer - The Pennsylvania State University
David Hall - The Pennsylvania State University

The INFra Rig: Experimental and Numerical Investigation of Fan Intake Interaction Under Crosswind Conditions, {GT2025-153132}

Technical Paper Publication

Jonas Grubert - Institute of Jet Propulsion and Turbomachinery TU Braunschweig
Lennart Harjes - Institute of Jet Propulsion and Turbomachinery TU Braunschweig
Patrick Brunow - Institute of Jet Propulsion and Turbomachinery TU Braunschweig
Jan Gößling - Institute of Turbomachinery and Fluid Dynamics Leibniz Universität Hannover
Maximilian Mennicken - Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR)
Nick Gottschalk - Institute of Jet Propulsion and Turbomachinery TU Braunschweig
Christoph Bode - Institute of Jet Propulsion and Turbomachinery TU Braunschweig
Jens Friedrichs - Institute of Jet Propulsion and Turbomachinery TU Braunschweig

34-05 Physics-based and machine learning models

6/18/2025

8:00 AM to 10:00 AM - LL3

Chair: **Jeff Defoe** -

Chair: **Jeffrey Krise** - **Honeywell**

Chair: **Dale Fox** -

Presentations:

Advanced Generative Neural Networks for Predicting Complex 2D Physical Fields With Minimal Data: A VQVAE-Transformer Framework, {GT2025-151756}

Technical Paper Publication

Andreas Schmitz - German Aerospace Center (DLR)

Robert Schaffrath - German Aerospace Center

Christian Voss - German Aerospace Center

Aryan Karimian - German Aerospace Center

Deeksha Singh - German Aerospace Center

Dominik Heinen - German Aerospace Center

On the Use of Machine Learning to Classify Laminar Separation Bubbles, {GT2025-153777}

Technical Paper Publication

Jared Kerestes - AFRL

Chris Marks - AFRL

Mitch Wolff - Wright State University

John Clark - AFRL

Analytical Model for Leakage Prediction in an Axial Labyrinth Seal, {GT2025-153707}

Technical Paper Publication

Saurabh Lanjewar - Indian Institute of Science Bengaluru, Karnataka

Pramod Kumar - Indian Institute of Science

Pramod Chandra Gopi - Triveni Turbines Limited

A Hyperbolic One-Dimensional Model for Two-Phase Flows in Converging-Diverging Nozzles, {GT2025-153250}

Technical Paper Publication

Andrea Cioffi - Technical University Denmark

Alberto Bergamin - Technical University of Denmark

Roberto Agromayor - Technical University of Denmark

Fredrik Haglind - Technical University of Denmark

04-09 Combustion Modeling II

6/18/2025

8:00 AM to 10:00 AM - 108

Chair: **Samir Rida** -

Chair: **David Noble** - **EPRI**

Chair: **Agnes Jocher** - **TU Munich**

Chair: **Pinaki Pal** - **Argonne National Laboratory**

Presentations:

Review and Development of Natural Gas/Hydrogen Fuel Flexible Reduced Chemical Mechanism for High-Order Modeling of Gas Turbines Part II: NO_x Chemistry, {GT2025-152460}

Technical Paper Publication

Miguel Valles Castro - Colorado State University

Bret Windom - Colorado State University

Numerical Investigation of Premixed and Non-Premixed Hydrogen Flames Using Large-Eddy Simulations and Flamelet Models, {GT2025-152669}

Technical Paper Publication

Antonio Masucci - Università degli Studi di Cagliari
Tiziano Ghisu - Università degli Studi di Cagliari
Andrea Giusti - Imperial College London

Comparative Evaluation of Flamelet Generated Manifold and Finite Rate Combustion Model Results for Bluff Body Stabilized Pure Hydrogen Flame Using NTNU Atmospheric Rig Test Data, {GT2025-152810}

Technical Paper Publication

Vijay Narayan - Ansys Software Pvt Ltd
Sourabh Shrivastava - Ansys Software Pvt Ltd
Naseem Ansari - Ansys Software Pvt Ltd
Pravin Nakod - Ansys Software Pvt Ltd

Numerical Study of Flame Anchoring in Micromixer Tubes, {GT2025-153589}

Technical Paper Publication

Subhasish Bhattacharjee - GE Vernova
Wessam Estefanos - GE Vernova
Homayoon Feiz - GE Vernova
Hasan Karim - GE Vernova

04-15 Combustor Design III

6/18/2025

8:00 AM to 10:00 AM - 109 A/B

Chair: **Samir Rida -**

Chair: **David Noble - EPRI**

Chair: **Antonio Ficarella - University of Salento**

Chair: **Elizabeth Paasche - GE Vernova**

Presentations:

Effect of Finite Mixing Timescales in Nonpremixed Rich Relaxation Lean (NRRL) Combustors, {GT2025-153464}

Technical Paper Publication

Shivam Patel - Georgia Institute of Technology
Benjamin Emerson - Georgia Institute of Technology

Impact of Fuel Injection System on the Performance of An Industrial Burner With Hydrogen Piloting Operated With Simulated Exhaust Gas Recirculation, {GT2025-153749}

Technical Paper Publication

Sofia Galeotti - DIEF Department of Industrial Engineering of the University of Florence
Alessio Picchi - DIEF Department of Industrial Engineering of the University of Florence
Riccardo Becchi - DIEF Department of Industrial Engineering of the University of Florence
Roberto Meloni - Baker Hughes
Giulia Babazzi - Baker Hughes
Antonio Andreini - DIEF Department of Industrial Engineering of the University of Florence

27-01: Controls and Probability in Rotordynamics

6/18/2025

8:00 AM to 10:00 AM - 107 A/B

Chair: **Filippo Cangioli - Waukesha Bearings**

Chair: **Rasish Khatri - Calnetix Technologies**

Chair: **Patrick Keogh - University of Bath**

Presentations:

Control of Seismic Excitation in Power Generation Turbomachines Utilizing Active Oil Film Bearings, {GT2025-151416}

Technical Paper Publication

Ioannis Gavalas - National Technical University of Athens

Athanasios Chasalevris - National Technical University of Athens

Jerzy Sawicki - Cleveland State University

Probabilistic Based Automated Tool for Unbalance Calculation Forecasting, {GT2025-153198}

Technical Paper Publication

Luca Fantaccione - Baker Hughes

Giacomo Ragni - Baker Hughes

Correlation and Repeatability Improvement Between Tie Bolt Stretch, Vibration Levels and Process Control Using Automated Stretch Tool and Regression Analysis – Part II, {GT2025-153893}

Technical Paper Publication

Lajos Horvath - Pratt and Whitney

Parag Mathuria - Pratt & Whitney

Gregory Savelle - Pratt & Whitney

Tsing-Yi Liu - Pratt & Whitney

08-02: High Hydrogen Gas Turbine

6/18/2025

8:00 AM to 10:00 AM - 113

Chair: **Benjamin Emerson -**

Chair: **Tom Christiansen - SPS**

Chair: **Rick Tomlinson - Chevron**

Chair: **David Wu -**

Chair: **Jeffrey Benoit - PSM**

Presentations:

Meta-Analysis of Thermal Barrier Coating Lifetimes in High-Water Vapor Environments: Implications for High-Hydrogen Gas Turbines, {GT2025-153203}

Technical Paper Publication

Caleb Clark - Pennsylvania State University

Paige Doerr - Pennsylvania State University

David R. Noble - EPRI

Michael Gagliano - EPRI

Alex Bridges - EPRI

Jacqueline O'Connor - Pennsylvania State University

Leak Detection and SOx Emissions Tradeoffs With Odorized Hydrogen–Natural Gas Fuel Blends in Gas Turbines, {GT2025-151912}

Technical Paper Publication

Christopher M. Douglas - Duke University

Alexander Gupta - EPRI

Eladio Knipping - EPRI

Thomas D. Martz - EPRI

David Robert Noble - EPRI

A Comprehensive Review of Hydrogen Safety for Gas Turbine Power Plant Operations , {GT2025-155050}

Technical Paper Publication

Christopher Loving - UCF

Garrett Mastantuono - UCF

Ramees Khaleel Rahman - UCF

Subith Vasu - UCF
Travis Pigon - Mitsubishi Power, Americas, Inc
Scott Cloyd - Mitsubishi Power, Americas, Inc

21-04: Mechanical Integrity and Operational Aspects

6/18/2025

8:00 AM to 10:00 AM - LL8

Chair: **Christian Siewert - Siemens Energy**

Chair: **Christian Kontermann - Trier University of Applied Sciences**

Chair: **Alex Stein - GE Aerospace**

Presentations:

Enabling Operational Flexibility of Power Generation Systems: Novel Experimental Facility for Characterisation of Turbine Casing Thermal Field, {GT2025-152287}

Technical Paper Publication

Chukwuemeka Godwin Nwangele - University of Oxford

Mark Baker - University of Oxford

Koichi Tanimoto - Research and Innovation Centre, Mitsubishi Heavy Industries, Japan

Ryo Egami - Research and Innovation Centre, Mitsubishi Heavy Industries, Japan

Budimir Rosic - University of Oxford

Wall Condensation in Steam Turbine Start-Ups: Preliminary Design Assessments, {GT2025-152974}

Technical Paper Publication

Isacco Rafanelli - University of Florence

Antonio Andreini - university of Florence

Bruno Facchini - University of Florence

Tommaso Diurno - Baker Hughes

Stella Grazia Tomasello - Baker Hughes

Enhanced Constitutive Creep-Fatigue Model for Industry Using Neural Networks-Based Parameter Identification and Implementation in FE-Code, {GT2025-153596}

Technical Paper Publication

Yevgen Kostenko - Siemens Energy Global GmbH & Co. KG

Konstantin Naumenko - Otto-von-Guericke-University Magdeburg

Alexander Jahnke - Otto-von-Guericke-University Magdeburg

03-04 Advancements in Turboprop and Turboshift Engine Technologies

6/18/2025

8:00 AM to 10:00 AM - 105

Chair: **Marcel Otto -**

Chair: **Angela Serra - Baker Hughes**

Chair: **Elena Torres -**

Presentations:

Study of Hybridization Level for Propulsion System in Multi-Megawatt Turboprop Aircraft, {GT2025-152438}

Technical Paper Publication

Jan Pařez - CTU in Prague

Patrik Kovář - CTU in Prague

Michael Valášek - CTU in Prague

Particulate and Gaseous Emissions of an Allison 250-C20B Turboshift Engine Using FT-SPK, {GT2025-152708}

Technical Paper Publication

Alexander Rabl - Technical University of Munich - Institute of Turbomachinery and Flight Propulsion
Marius Rohkamp - University of the Bundeswehr Munich - Institute for Aeronautical Engineering
Mohammad Reza Saraji-Bozorgzad - University of the Bundeswehr Munich - Institute for Chemistry and Environmental Engineering
Jan Bendl - University of the Bundeswehr Munich - Institute for Chemistry and Environmental Engineering
Barbara Giocastro - University of the Bundeswehr Munich - Institute for Chemistry and Environmental Engineering
Rares Cotenescu - Technical University of Munich - Institute of Turbomachinery and Flight Propulsion
Victor Burger - Sasol - Applied Research and Technology
Thomas Adam - University of the Bundeswehr Munich - Institute for Chemistry and Environmental Engineering
Andreas Hupfer - University of the Bundeswehr Munich - Institute for Aeronautical Engineering
Volker Gümmer - Technical University of Munich - Institute of Turbomachinery and Flight Propulsion

Report on Incidental Findings of Cyclic O-Ring Behavior During Fuel/Elastomer Compatibility Testing, {GT2025-152962}

Technical Paper Publication

Jerry Hamilton - The University of Alabama
Bhupendra Khandelwal - University of Alabama

Design Space Exploration of Geared Turbofans Using Alternative Fuels, {GT2025-153997}

Technical Paper Publication

Nabila Cava Zamorano - CRANFIELD UNIVERSITY
Pavlos Rompokos - Cranfield University
Christos Mourouzidis - Cranfield University
Ioannis Roumeliotis - Cranfield University

01-06 Alternative Fuels in Whole Engine Performance

6/18/2025

8:00 AM to 10:00 AM - 111

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**

Chair: **Curtis Vedder - Honeywell**

Chair: **Kevin Shepherd - Honeywell**

Chair: **Antonio Ficarella - University of Salento**

Presentations:

Experimental Investigation on Supported Iron Catalyst for High Temperature NH₃-SCR of NO_x in Regard to Aviation, {GT2025-151240}

Technical Paper Publication

Connor Wall - University of Central Florida
Saqib Shahzad - University of Central Florida
Erik Fernandez - University of Central Florida
Matthew Dearolph - University of Central Florida
Marcel Otto - University of Central Florida
Richard Blair - University of Central Florida
Jayanta Kapat - University of Central Florida

Impact of Fuel Conditioning and Combustor Injection Temperature on a Hydrogen Turboprop, {GT2025-152936}

Technical Paper Publication

Diana San Benito Pastor - Safran SA
Nicolas Parmentier - Safran Power Units

Investigation of Fuel Deposition in an Aviation Fuel Injector Under Controlled Conditions Using a Last-Chance Screen, {GT2025-153370}

Technical Paper Publication

Anette Lira - Texas A&M University
Raquel Juarez - Texas A&M University
Codruta Loebick - Precision Combustion Inc
Eric L. Petersen - Texas A&M University

A Novel Low NOx Hydrogen Micromix Combustion Arrangement Optimized for Additive Manufacturing and Annular Aeroengine Combustors, {GT2025-153241}

Technical Paper Publication

Harald Funke - University of Applied Sciences Aachen
Jan Vierkötter - University of Applied Sciences Aachen
Jan Keinz - University of Applied Sciences Aachen

35-03/10-03 Joint session: Fan Noise

6/18/2025

8:00 AM to 10:00 AM - LL4

Chair: **Ricardo Blazquez-Navarro - Airbus**

Chair: **Stefano Bianchi - Airbus**

Presentations:

A Comparative Study of Computational Aeroacoustics Modelling of an Axial Fan Using CAA and FW-H Models in the URANS and DES Framework, {GT2025-153849}

Technical Paper Publication

Midhun Murali Mohan - Flowthermolab Pvt. Ltd.
Rahul Jayakumar - Flowthermolab Pvt. Ltd.
Sandeep Mouvanal - Flowthermolab Ltd.

Wind Tunnel Continuous-Scan Acoustic Analysis of Ducted Fan Tones Interacting With a Shielding Wall, {GT2025-151902}

Technical Paper Publication

Parthiv Shah - ATA Engineering, Inc.
Dan Hensley - ATA Engineering, Inc.
Dimitri Papamoschou - University of California, Irvine
David Stephens - NASA Glenn Research Center

Minimal Modelling for Noise and Vibration Propensity of Low-Speed Axial Flow Rotor Blades Due to Vortex Shedding, {GT2025-153711}

Technical Paper Publication

Marton Mizsei - Department of Fluid Mechanics, Faculty of Mechanical Engineering, Budapest University of Technology and Economics
Eszteella Balla - Department of Fluid Mechanics, Faculty of Mechanical Engineering, Budapest University of Technology and Economics
Janos Vad - Budapest University of Technology and Economics

Relating Cutoff Pressure Distribution and Acoustic Signature of Centrifugal Fans Through Experimental Correlation, {GT2025-153003}

Technical Paper Publication

Till M. Biedermann - TH Nürnberg Georg Simon Ohm
Dennis Kammerzelt - TH Nürnberg Georg Simon Ohm

05-05: Vibration Monitoring Analysis

6/18/2025

8:00 AM to 10:00 AM - LL10

Chair: **Lorenzo Ferrari - University of Pisa**
Chair: **Lubomir Ribarov - U.S. Merchant Marine Academy**
Chair: **Joshua Adams -**
Presentations:

Tip Clearance Behavior in Centrifugal Compressors of High-Powered Emergency Gas Turbines, {GT2025-151191}
Technical Paper Publication
Fumiya Kurita - IHI Corporation
Wataru Sato - IHI Corporation
Yusuke Yamagishi - IHI Corporation
Hisashi Asai - IHI Power Systems

Compressor Blade Vibration Measurement Using Radio Frequency Amplitude and Frequency Modulation, {GT2025-154063}
Technical Paper Publication
Yuko Inoue - University of Notre Dame
Nathaniel Griggs - University of Notre Dame
Thomas Pratt - University of Notre Dame
Scott Morris - University of Notre Dame

Rapid Blade Pit Analysis by Blue Light Scanning, {GT2025-154227}
Technical Paper Publication
Kamel Tayebi - GE VERNOVA
Badi Alquzayz - GE VERNOVA
Hariharan Sundaram - GE VERNOVA
Alaaeldin Dawood - GE VERNOVA
Abdurrahman Khalidi - Formerly GE Vernova

Instantaneous Angular Speed Tracking of Rotating Machines Using a Bayesian Framework, {GT2025-153005}
Technical Paper Publication
Maxime Leiber - Safran Tech
Yosra Marnissi - Safran Tech
Nacer Yousfi - Safran Tech
Jean-Frédéric Diebold - Safran Tech
Mohammed El Badaoui - Safran Tech

18-04: Failure Prediction & Life Assessment I

6/18/2025

8:00 AM to 10:00 AM - LL9

Chair: **Scott Keller - Doosan Turbomachinery Services**
Chair: **Scott Yandt -**
Chair: **William Day -**
Chair: **Alex Bridges -**
Chair: **Sandra Megahed -**
Chair: **Calvin Stewart - Ohio State University**
Presentations:

Charpy Impact Testing of the Newly Developed High Gamma Prime Ni-Based LW LCT Superalloy for Qualification of 3D AM of Components for Petroleum and Natural Gas, Turbine Engines, and Aerospace Industries, {GT2025-151561}
Technical Paper Publication
Mathieu Brochu - McGill University
Alexandre Gontcharov - Liburdi Turbine Services
Ashutosh Jena - McGill University

Mudit Kesharwani - McGill University
Paul Lowden - Liburdi Turbine Services
Max Parthun - Liburdi Turbine Services

A Novel Accelerated Fatigue Testing Method for Rapid Additive Manufacturing Qualification, {GT2025-154141}

Technical Paper Publication

Onome Scott-Emuakpor - Hyphen Innovations
Philip Johnson - Hyphen Innovations
Harshith Vadrevu - Hyphen Innovations
Artur Ulsenheimer - The Ohio State University
Calvin Stewart - The Ohio State University

Using an Additive Manufacturing Design Method to Achieve Fan Blade Damage Resistance, {GT2025-154213}

Technical Paper Publication

Onome Scott-Emuakpor - Hyphen Innovations
Philip Johnson - Hyphen Innovations
John Middendorf - The Ohio State University

06-05 Heat Pumps-I

6/18/2025

8:00 AM to 10:00 AM - 112

Chair: **Panagiotis Stathopoulos - Deutsches Zentrum für Luft und Raumfahrt**

Chair: **Alessandro Sorce - Università degli Studi di Genova**

Chair: **Eduardo Anselmi Palma - CRANFIELD UNIVERSITY**

Presentations:

Quasi-Static Simulation of a Start-Up Procedure for a Multistage Centrifugal Compression System, {GT2025-151935}

Technical Paper Publication

Maximilian Kriese - German Aerospace Centre (DLR e.V.)
Michael Lockan - German Aerospace Centre (DLR e.V.)
Robert Schaffrath - German Aerospace Centre (DLR e.V.)
Panagiotis Stathopoulos - German Aerospace Centre (DLR e.V.)

Experimental Investigation on the Dynamic Response of a Vaned Diffuser Compressor in Innovative Heat-Pump Systems, {GT2025-151820}

Technical Paper Publication

Paolo Silvestri - University of Genova
Marco Martins Afonso - SIT Technologies
Carlo Alberto Niccolini Marmont Du Haut Champ - University of Genoa - DIME
Federico Reggio - University of Genoa - DIME
Alberto Traverso - University of Genoa - DIME
Chaitanya Halbe - Carrier Corporation

Numerical Investigation of Two-Phase Water Ejectors for High-Temperature Heat Pumps: Insights Into Flow Behavior and Shock Wave Dynamics, {GT2025-151706}

Technical Paper Publication

Omar Abu Khass - German Aerospace Center
Marco Cristofaro - German Aerospace Center Institute of Software Methods for Product Virtualization
Saketh Bharadwaj Koppa - German Aerospace Center Institute of Low-Carbon Industrial Processes
Steffen Klöppel - German Aerospace Center Institute of Low-Carbon Industrial Processes
Eberhard Nicke - German Aerospace Center Institute of Low-Carbon Industrial Processes
Panagiotis Stathopoulos - German Aerospace Center Institute of low-carbon industrial processes

32-05 High-Speed LPT

6/18/2025

10:30 AM to 12:00 PM - LL2

Chair: **Thomas Praisner - Pratt & Whitney**

Chair: **Emil Goettlich -**

Chair: **Marcel Oettinger - MTU Aero Engines**

Presentations:

URANS Investigation of Unsteady Wakes and Purged Hub Cavity Impact on the Aerodynamics of a High Speed Low-Pressure Turbine Cascade, {GT2025-151856}

Technical Paper Publication

Alessandro Schenatti - Safran Helicopter Engines

Thomas Bontemps - DAAA, ONERA, Institut Polytechnique de Paris

Luis Bernardos - DAAA, ONERA, Institut Polytechnique de Paris

Emma Croner - Safran Helicopter Engines

Sébastien Le-Guyader - Safran Helicopter Engines

Sergio Lavagnoli - von Karman Institute for Fluid Dynamics

Emmanuel Laroche - DMPE, ONERA, Université de Toulouse

The Impact of Transition and Turbulence Modelling on the SPLEEN High-Speed Low-Pressure Turbine Cascade, {GT2025-153288}

Technical Paper Publication

Leonardo Metti - University of Florence

Michele Marconcini - University of Florence

Simone Salvadori - Politecnico di Torino

Daniela Anna Misul - Politecnico di Torino

Nicola Rosafio - Politecnico di Torino

Gustavo Lopes - von Karman Institute

Sergio Lavagnoli - von Karman Institute

Yuan Fang - University of Melbourne

Richard D Sandberg - University of Melbourne

Roberto Pacciani - University of Florence

Impact of Tailboard Configuration on Flow Periodicity in Transonic Low-Pressure Turbine Cascades, {GT2025-153656}

Technical Paper Publication

Alexandre Halby - von Karman Institute for Fluid Dynamics

Giovanni Di Lucia - von Karman Institute for Fluid Dynamics

Sergio Lavagnoli - von Karman Institute for Fluid Dynamics

Stefano Guidolotti - Morfo Design

Matteo Giovannini - Morfo Design

Filippo Rubechini - Morfo Design

Monica Gily - Avio Aero

Andrea Notaristefano - Avio Aero

31-05 Experimental Methods

6/18/2025

10:30 AM to 12:00 PM - LL1

Chair: **Lisa Brilliant - Pratt & Whitney**

Chair: **Daniel Wilkin II - GE Aerospace**

Chair: **Yuan Dong - Pratt & Whitney**

Chair: **Herbert Harrison - NASA**

Presentations:

Compressor Stator Leading Edge Instrumentation, {GT2025-154012}

Technical Paper Publication

Tolga Yasa - University of Cambridge

Abi Sakthivel - University of Cambridge

Kirill Romanenko - University of Cambridge

James Taylor - University of Cambridge

3-D Flow Field Characterization and Blockage Effects in an Open Jet Probe Calibration Wind Tunnel, {GT2025-151866}

Technical Paper Publication

Konstantin Speck - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion

Carlos Eduardo Ribeiro Santa Cruz Mendoza - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion

Patrick Steudel - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion

Rares Cotenescu - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion

Volker Gümmer - Technical University of Munich, Institute of Turbomachinery and Flight Propulsion

Design and Commissioning of a Supersonic Linear Compressor Cascade Test Section in the VKI Isentropic Compression Tube CT-2 Facility, {GT2025-153123}

Technical Paper Publication

Julien Clinkemaele - von Karman Institute for Fluid Dynamics

Yves Marichal - Safran Aero Boosters

Rémy Princivalle - Safran Aero Boosters

Fabrizio Fontaneto - von Karman Institute for Fluid Dynamics

14-04: Turbine Rim Seal and Rotor-Stator Cavity 1

6/18/2025

10:30 AM to 12:00 PM - LL6

Chair: **James Scobie -**

Chair: **Hui Tang - University of Bath**

Chair: **Michael D. Barringer - Penn State**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl M. Sangan -**

Chair: **Erinc Erdem -**

Chair: **Erinc Erdem -**

Presentations:

Experimental Investigation of Rim Seal Instabilities and Annulus-Flow Interactions in Two Transonic Turbine Stages, {GT2025-153223}

Technical Paper Publication

Lorenzo Da Valle - Von Karman Institute for Fluid Dynamics

Filippo Merli - von Karman Institute for Fluid Dynamics

Sergio Lavagnoli - von Karman Institute for Fluid Dynamics

Synchronisation of the Unsteady Pressure Field: an Explanation for Amplified Ingress, {GT2025-152901}

Technical Paper Publication

Simon Vella - University of Bath

James A. Scobie - University of Bath

Gary D. Lock - University of Bath

Carl M. Sangan - University of Bath

Hui Tang - University of Bath

Numerical Study of Unsteady Rotating Structures in a Turbine Disk Cavity, {GT2025-153106}

Technical Paper Publication

Teodosio Nacci - Politecnico di Torino

Simone Salvadori - Politecnico di Torino
Daniela Anna Misul - Politecnico di Torino

04-07 Ammonia Combustion I

6/18/2025

10:30 AM to 12:00 PM - 108

Chair: **Samir Rida -**

Chair: **Francesco Di Sabatino - SWRI**

Chair: **Prakash Dalsania - GE Vernova**

Presentations:

A Study on Combustion Characteristics of Radial Inward Flow Porous Media Burners for Ammonia-Hydrogen Flames, {GT2025-152740}

Technical Paper Publication

Guguloth Mahesh Nayak - Technion-IIT

Beni Cukurel - Technion-IIT

Joseph K. Lefkowitz - Technion-IIT

Towards the Development of a RRQL System Part 1: Swirl Pattern Effect on Exhaust Emissions and Chemiluminescence Distribution for NH₃-Air Premixed Swirl Flames, {GT2025-153023}

Technical Paper Publication

Renee Cole - Georgia Institute of Technology

Cristian D. Avila Jimenez - Georgia Institute of Technology

David R. Noble - EPRI

Robert Steele - EPRI

David Wu - Georgia Institute of Technology

Benjamin L. Emerson - Georgia Institute of Technology

Timothy C. Lieuwen - Georgia Institute of Technology

Numerical Concept Study for Part-Load Operation of the Ansaldo Constant Pressure Sequential Combustion System Operated in Rich-Dilute-Lean Mode Using Ammonia-Based Gaseous Fuels, {GT2025-153561}

Technical Paper Publication

Ole H. H. Meyer - SINTEF

Andrea Gruber - SINTEF

Luis Tay-Wo-Chong - Ansaldo Energia Switzerland

Andrea Ciani - Ansaldo Energia Switzerland

04-30 Emissions I

6/18/2025

10:30 AM to 12:00 PM - 109 A/B

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Irfan A. Mulla -**

Chair: **Thomas Bronson -**

Presentations:

Investigation of Impact of Steam Addition on Combustion Behavior and Pollutant Emissions in an RQL Combustor at High Pressure, {GT2025-153904}

Technical Paper Publication

Joshua A.T. Gray - German Aerospace Center (DLR)

Oliver Lammel - German Aerospace Center (DLR)

Holger Ax - German Aerospace Center (DLR)
Rainer Lückert - German Aerospace Center (DLR)
Klaus Peter Geigle - German Aerospace Center (DLR)
Gregory Boardman - Pratt and Whitney Engineering
Wookyoung Kim - RTX Technology Research Center, Combustion & Propulsion Technology
Matthias Haeringer - MTU Aero Engines AG

Modeling of Pollutant Emissions of Jet-Stabilized Combustors for Micro Gas Turbines Using a Chemical Reactor Network, {GT2025-153941}

Technical Paper Publication

Sascha Jacobs - German Aerospace Center (DLR)
Trupti Kathrotia - German Aerospace Center (DLR)
Torsten Methling - German Aerospace Center (DLR)
Markus Köhler - German Aerospace Center (DLR)

CFD Evaluation of Soot Formation in a Gas Turbine Combustor Using a Flamelet Progress Variable Approach, {GT2025-153021}

Technical Paper Publication

Kumud Ajmani - HX5 LLC
Francisco J. Guzman - NASA Glenn Research Center
Kenji Miki - NASA Glenn Research Center

23-10 Labyrinth Seals

6/18/2025

10:30 AM to 12:00 PM - 106

Chair: **Tingcheng Wu** -

Chair: **Jurg Schiffmann** -

Presentations:

CFD Modeling of a High-Pressure Honeycomb Seal for Centrifugal Compressors, {GT2025-152122}

Technical Paper Publication

Andrea Riva - Politecnico di Milano
Edoardo Gheller - Politecnico di Milano
Steven Chatterton - Politecnico di Milano
Paolo Pennacchi - Politecnico di Milano
Allegra Fabrizi - Baker Hughes
Claudio Orazi - Baker Hughes
Giuseppe Vannini - Baker Hughes

Rotordynamic Coefficients and Leakage Analysis of Labyrinth Seals in Oil-Free Centrifugal Compressor Using Transient CFD Approach With Refrigerants, {GT2025-153351}

Technical Paper Publication

Wenjie Yin - Copeland Corporation
Ammasai Palani - Copeland Corporation
Robert Wang - Copeland Corporation

Rotordynamic Characteristics for a Tooth-On-Rotor Long Labyrinth Seal Using Computational Fluid Dynamics, {GT2025-153388}

Technical Paper Publication

Manish Thorat - Ebara Elliott Energy
James Hardin - Ebara Elliott Energy
Luis San Andrés - Texas A&M University

26-02 Probabilistic Fatigue Crack Nucleation and Growth Lifting Applications

6/18/2025

10:30 AM to 12:00 PM - 107 A/B

Chair: **Michael Enright - Southwest Research Institute**

Chair: **Kai Kadau - Siemens Energy Inc**

Chair: **Christian Amann - Siemens Energy**

Presentations:

Probabilistic Gas Turbine Rotor Disk Forging Flaw Crack Nucleation Model Based on Experimental Data and Plasticity-Corrected Stress Intensity Factor, {GT2025-151763}

Technical Paper Publication

Yanqiao Yang - Siemens Energy

Christian Amann - Siemens Energy

Igor Varfolomeev - Fraunhofer IWM

Peter Gumbsch - Fraunhofer IWM

Kai Kadau - Siemens Energy

The IBESS Model As a Base for Probabilistic Modeling of Fatigue Life Prediction in Cast MAR-M247 Considering Shrinkage Pores, {GT2025-153277}

Technical Paper Publication

Malek Al-Ameri - Siemens Energy Global GmbH & Co. KG

Christian Amann - Siemens Energy Global GmbH & Co. KG

Jan Radners - Fraunhofer Institute for Mechanics of Materials IWM

Christoph Schweizer - Fraunhofer Institute for Mechanics of Materials IWM

Michael Schlesinger - Fraunhofer Institute for Mechanics of Materials IWM

Stefan Eckmann - Fraunhofer Institute for Mechanics of Materials IWM

Peter Gumbsch - Fraunhofer Institute for Mechanics of Materials IWM

Kai Kadau - Siemens Energy Inc.

GPU-Accelerated Probabilistic Lifetime Analysis of High-Temperature Components Using Damage Mechanics Models, {GT2025-154218}

Technical Paper Publication

Felix Kölzow - TU Darmstadt, Department and Institute of Materials Technology

Amon Ditzinger - TU Darmstadt, Department and Institute of Materials Technology

Tobias Durst - TU Darmstadt, Department of Computer Science, Laboratory for Parallel Programming

Lukas Rothenberger - TU Darmstadt, Department of Computer Science, Laboratory for Parallel Programming

Felix Wolf - TU Darmstadt, Department of Computer Science, Laboratory for Parallel Programming

Christian Kontermann - Trier University of Applied Sciences

Matthias Oechsner - TU Darmstadt, Department and Institute of Materials Technology

36-05 Aerodynamic optimization

6/18/2025

10:30 AM to 12:00 PM - LL3

Chair: **Marcus Meyer -**

Chair: **Christopher J. Clark - Whittle Laboratory**

Chair: **Georgios Goinis - DLR**

Presentations:

CFD Based Design of a Centrifugal Compressor for Enhanced Range of Operation, {GT2025-152359}

Technical Paper Publication

Krishnendu G S - Flowthermolab Pvt. Ltd.

Mehulkumar Khiloshiya - Flowthermolab Pvt. Ltd.

Sandeep Mouvanal - Flowthermolab Ltd.

Rahul Jayakumar - Flowthermolab Pvt. Ltd.

A Novel Multi-Level Optimization Framework for Propeller Aerodynamic Optimization, {GT2025-153274}

Technical Paper Publication

Manuel Casablanca - Università Degli Studi di Padova

Francesco De Vanna - Università Degli Studi di Padova

Andrea Magrini - Università Degli Studi di Padova

Ernesto Benini - Università Degli Studi di Padova

Adjoint-Based Aerodynamic Design Optimization for Centrifugal Compressor With Structural Constraints, {GT2025-151853}

Technical Paper Publication

Robert Schaffrath - German Aerospace Center

Jan Backhaus - German Aerospace Center

Christian Voß - German Aerospace Center

Eberhard Nicke - German Aerospace Center

21-03: Industrial, Marine and Small Steam Turbines

6/18/2025

10:30 AM to 12:00 PM - LL8

Chair: **Alexander Mirzamoghadam - Northrop Grumman**

Chair: **Christian Siewert - Siemens Energy**

Chair: **Volker Fruetel - Siemens Energy**

Presentations:

Modifications of Balancing Slots in Drum Rotor Arrangement of Steam Turbine Stages and Their Influence on Efficiency, {GT2025-151556}

Technical Paper Publication

Guk Chol Jun - Czech Technical University

Vaclav Slama - Doosan Skoda Power

Bartolomej Rudas - Doosan Skoda Power

Aspects of Underwater Marine Steam Turbine Propulsion Application Benefiting From Gas Turbines, {GT2025-154142}

Technical Paper Publication

Alexander Mirzamoghadam - Northrop Grumman

01-04 Engine Performance and Cycle Design II

6/18/2025

10:30 AM to 12:00 PM - 111

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**

Chair: **Curtis Vedder - Honeywell**

Chair: **Stavros Vouros - Malardalen University**

Chair: **Faezeh Rasimarzabadi - National Research Council Canada**

Presentations:

Gas Turbine Engine Performance Estimation Using Model-Based System Engineering, {GT2025-153583}

Technical Paper Publication

Pravin Nakod - Ansys Software Pvt Limited, India

Himangshu Bora - Ansys India Pvt Limited

Prem Andrade - Ansys India Pvt Limited

Pranjal Sharma - Ansys India Pvt Limited

Development and Validation of a Transient Gas Turbine Simulation Tool for Shaft-Failure Modelling, {GT2025-151418}

Technical Paper Publication

Sajal Kissoon - Cranfield University

Mauro Righi - Rolls-Royce

Lucas Pawsey - Rolls-Royce

Vassilios Pachidis - Cranfield University

Ioannis Roumeliotis - Cranfield University

Dynamic Response of Turbofan Engine in the Event of Shaft Failure: Fan and Compressor Operating Points and Turbine Overspeed Analysis, {GT2025-151647}

Technical Paper Publication

Yuxi Guan - Civil Aviation University of China

Shuai Liu - Civil Aviation University of China

Jie Bai - Civil Aviation University of China

33-03 Deposition and erosion in cold engine components

6/18/2025

10:30 AM to 12:00 PM - LL4

Chair: **Bruce Varney - Rolls-Royce Corporation**

Chair: **Sergio Lavagnoli - VKI**

Chair: **Brett Barker - Rolls-Royce Corporation**

Presentations:

Multiphysics Optimization of an Electro-Dynamic Filter for Gas Turbine, {GT2025-153216}

Technical Paper Publication

Mattia Piovan - University of Ferrara

Michele Pinelli - University of Ferrara

Alessio Suman - University of Ferrara

Nicola Zanini - University of Ferrara

Stefano Rossin - Baker Hughes Srl

Stefano Minotti - Baker Hughes Srl

Numerical Investigation of Sand Erosion Considering Particle Fracture in a Multi-Stage Compressor, {GT2025-153553}

Technical Paper Publication

Masaya Suzuki - Japan Aerospace Exploration Agency

Soichiro Fujimura - Tokyo University of Science

Makoto Yamamoto - Tokyo University of Science

Ryosuke Hayashi - IHI Corporation

Ryuichi Okada - IHI Corporation

Electrostatic Effects on Airborne Particle Deposition in Gas Turbine Engines, {GT2025-152954}

Technical Paper Publication

Tanner Sabau - The Ohio State University

Kyle Frith - The Ohio State University

Jeffrey Bons - The Ohio State University

05-01: GT Performance

6/18/2025

10:30 AM to 12:00 PM - LL10

Chair: **Donald Simon - NASA**

Chair: **Lubomir Ribarov - U.S. Merchant Marine Academy**

Chair: **Liang Tang -**

Presentations:

Analysis of Jet Engine Performance in Multisine Tests, {GT2025-151243}

Technical Paper Publication

Hoang Nguyen Huy - Viettel Aerospace Institute

Minh Hoang Nhat - Viettel Aerospace Institute

Linh Nguyen Viet - Viettel Aerospace Institute

Minh Nguyen Phi - Viettel Aerospace Institute

Development of an Engine Controller for an Allison M250 Engine, {GT2025-152417}

Technical Paper Publication

Nils Jakobs - German Aerospace Center, Institute of Combustion Technology

Martin Henke - German Aerospace Center, Institute of Combustion Technology

Jan Zanger - German Aerospace Center, Institute of Combustion Technology

Oliver Kislat - German Aerospace Center, Institute of Combustion Technology

Cedric Kraus - German Aerospace Center, Institute of Combustion Technology

Thomas Krummrein - German Aerospace Center, Institute of Combustion Technology

Anna Marcellan - German Aerospace Center, Institute of Combustion Technology

Andreas Mader - German Aerospace Center, Institute of Combustion Technology

Anika Moosbrugger - German Aerospace Center, Institute of Combustion Technology

Hannah Seliger-Ost - German Aerospace Center, Institute of Combustion Technology

Anes Mohammed Asmi - German Aerospace Center, Institute of Combustion Technology

Andreas Huber - German Aerospace Center, Institute of Combustion Technology

Transient Analysis of Hydrogen Co-Fired Gas Turbines During Load-Following Operation, {GT2025-153495}

Technical Paper Publication

Ji Hun Jeong - Inha University

Tong Seop Kim - Inha-University

18-02: Additive Manufacturing II

6/18/2025

10:30 AM to 12:00 PM - LL9

Chair: **Scott Keller - Doosan Turbomachinery Services**

Chair: **Dheepa Srinivasan -**

Chair: **Dipankar Dua -**

Chair: **Alex Bridges -**

Presentations:

Advancing High-Pressure Turbine Vane Cooling Efficiency Through Additive Manufacturing: Insights From the 3DCeraTurb Project, {GT2025-151862}

Technical Paper Publication

Jan Haubrich - Institute of Materials Research, German Aerospace Center (DLR), Cologne, Germany

Galina Kasperovich - Institute of Materials Research, German Aerospace Center (DLR), Cologne, Germany

Joachim Gussone - Institute of Materials Research, German Aerospace Center (DLR), Cologne, Germany

Anna Petersen - Institute of Propulsion Technology, German Aerospace Center (DLR), Goettingen, Germany

Robin Schoeffler - Institute of Propulsion Technology, German Aerospace Center (DLR), Goettingen, Germany

Moritz Lakemann - Engineering Systems House Nord, German Aerospace Center (DLR), Goettingen, Germany

Paul-Benjamin Ebel - Institute of Structures and Design, German Aerospace Center (DLR), Stuttgart, Germany

Peter Winkelmann - Institute of Structures and Design, German Aerospace Center (DLR), Stuttgart, Germany

Lothar Dorn - Engineering Systems House Nord, German Aerospace Center (DLR), Goettingen, Germany

Micro-Mixing Injector Manufacturing in Refractory Metal Using Laser Powder Bed Fusion Process, {GT2025-152506}
Technical Paper Publication

Xavier Bellavance - Université de Sherbrooke
Aurore Leclercq - École de Technologie Supérieure
Thibault Mouret - École de Technologie Supérieure
Alexandre Landry-Blais - Université de Sherbrooke
Mathieu Picard - Université de Sherbrooke
Vladimir Brailovski - École de Technologie Supérieure

From Legacy Alloys to Next-Gen Materials: the Future of Additive Manufacturing in Gas Turbine Hot Sections, {GT2025-152666}

Technical Paper Publication
Yogiraj Pardhi - Sulzer Management Ltd

30-03 Seals and Bearings

6/18/2025

10:30 AM to 12:00 PM - LL5

Chair: **Timothy Allison - Southwest Research Institute**

Chair: **Aaron Rimpel - Southwest Research Institute**

Chair: **Jeong Ik Lee - KAIST**

Presentations:

Operation of a Floating Ring Oil Seal in Supercritical CO2 Turbomachinery, {GT2025-154077}
Technical Paper Publication

John Klaerner - Southwest Research Institute
Thomas Kerr - Southwest Research Institute
Joshua Just - Southwest Research Institute
Jason Wilkes - Southwest Research Institute
Jeffrey Moore - Southwest Research Institute
Lev Ring - Sage Geosystems

Effect of Fluid Barrier in See-Through Labyrinth Seal for Supercritical CO2 Turbomachinery, {GT2025-153693}
Technical Paper Publication

Saurabh Lanjewar - Indian Institute of Science Bengaluru, Karnataka
Pramod Kumar - Indian Institute of Science
Pramod Chandra Gopi - Triveni Turbines Limited

Environmental Degradation of Hard and Soft Magnetic Materials in Gaseous and Supercritical CO2 Environments, {GT2025-153424}

Technical Paper Publication
Florent Bocher - Southwest Research Institute
Aaron Rimpel - Southwest Research Institute
Wanming Zhang - GE Vernova
Robert Lipham - Southwest Research Institute
Dongil Shin - GE Vernova
Amin Changizi - GE Vernova

12-10: Film Cooling Computational Studies (III)

6/18/2025

10:30 AM to 12:00 PM - LL7

Chair: **Lesley Wright - Texas A&M University**

Chair: **Jae Um** -
Chair: **Arnd Reichert** -
Presentations:

The Effect of Crossflow Velocity on the Film Cooling Effectiveness of Fan Shaped Holes, {GT2025-154073}

Technical Paper Publication

Semih Avcun - TUSAS ENGINE INDUSTRIES (TEI)

Erinc Erdem - TUSAS ENGINE INDUSTRIES (TEI)

Sinan Sal - TUSAS ENGINE INDUSTRIES (TEI)

Tolga Yasa - Whittle Laboratory

Investigation of a Dynamic Hybrid Turbulence Modeling Strategy for CFD Simulation of Compound-Angle Film Cooling, {GT2025-154111}

Technical Paper Publication

Cole Simmonds - University of Arkansas

D. Keith Walters - University of Arkansas

James Leylek - University of Arkansas

06-06 Heat Pumps-II

6/18/2025

10:30 AM to 12:00 PM - 112

Chair: **Alessandro Sorce - Università degli Studi di Genova**

Presentations:

A Comparative Study of Component Surrogate Model Approximation for Holistic, Multi-Disciplinary Optimization of High Temperature Heat Pumps, {GT2025-152774}

Technical Paper Publication

Jens Gollasch - German Aerospace Center (DLR)

Michael Lockan - German Aerospace Center (DLR)

Increasing Heat Pump Efficiency Through Expansion Turbine Integration: A Comparative Study of Refrigerants and Process Cycles, {GT2025-153828}

Technical Paper Publication

Leopold Müller - Institute of Thermal Turbomachinery and Machinery Laboratory

Fabian F. Müller - Institute of Thermal Turbomachinery and Machinery Laboratory, University of Stuttgart

Damian M. Vogt - Institute of Thermal Turbomachinery and Machinery Laboratory

Experimental Exergy Analysis of a High-Temperature Brayton Heat Pump, {GT2025-153648}

Technical Paper Publication

Nancy Kabat - German Aerospace Center, Institute of Low-Carbon Industrial Processes

Johannes Oehler - German Aerospace Center, Institute of Low-Carbon Industrial Processes

Panagiotis Stathopoulos - German Aerospace Center, Institute of Low-Carbon Industrial Processes

15-05: Additive Manufacturing Impacts on Internal Cooling

6/18/2025

1:30 PM to 3:30 PM - LL6

Chair: **Lorenzo Mazzei - Ergon Research**

Chair: **Riccardo Da Soghe** -

Chair: **Wontae Hwang** -

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl Sangan - University of Bath**

Chair: **Thomas Corbett -**

Presentations:

Design and Flow Considerations of Additively Manufactured, Internal Cooling Geometries for Small Industrial Gas Turbines, {GT2025-151522}

Technical Paper Publication

Matthew Searle - National Energy Technology Laboratory (NETL)

Daniel Cassar - Siemens Energy

Forrest Ames - National Energy Technology Laboratory (NETL)

Douglas Straub - National Energy Technology Laboratory (NETL)

Experimental Analysis on Micro-Channels With Different Cross-Sectional Shapes for Internal Cooling Applications, {GT2025-151753}

Technical Paper Publication

Tommaso Bacci - University of Florence

Alessio Picchi - University of Florence

Mauro Tagliaferri - University of Florence

Bruno Facchini - University of Florence

Internal Convective Heat Transfer in a Real Engine Component: a Comparison Between Pin-Fins and Kagome Lattice, {GT2025-152955}

Technical Paper Publication

Niccolò Castelli - University of Florence

Tommaso Bacci - University of Florence

Alessio Picchi - University of Florence

Bruno Facchini - University of Florence

Lorenzo Cocchi - Baker Hughes

Francesco Morante - Baker Hughes

Transpiration Cooling in Gas Turbine Trailing Edge Using Stainless Steel and Titanium Porous Media, {GT2025-151170}

Technical Paper Publication

Mohamed Tarif Raihan - University of Wisconsin-Milwaukee

Ryo Amano - University of Wisconsin-Milwaukee

32-06 Purge and Cooling Flows

6/18/2025

1:30 PM to 3:30 PM - LL2

Chair: **Sergio Lavagnoli - VKI**

Chair: **Cis De Maesschalck - Rolls-Royce**

Presentations:

Impact of the Stator-Side Swirler on Turbine Rim Sealing Effectiveness, {GT2025-151746}

Technical Paper Publication

Janghoon Kang - Seoul National University

Sung Jong Joo - University of Oxford

Youngkuk Yoon - Seoul National University

Geonhwan Cho - Hanwha Aerospace

Seung Jin Song - Seoul National University

Wind Tunnel Testing at TRL4 of EBC Coated SiC/SiC Nozzle Guide Vanes for High-Pressure Turbines With Trailing Edge Cooling, {GT2025-152853}

Technical Paper Publication

Anna Petersen - DLR

Benjamin Dimond - DLR
Anna-Samira Söhngen - DLR
Fabia Süß - DLR
Andrea Ebach-Stahl - DLR
Ravisankar Naraparaju - DLR
Michael Hilfer - TU Braunschweig
Robin G. Brakmann - DLR

Aerodynamic Interaction Between Main Annulus Flow and Injected Secondary Air in Transonic High-Pressure Turbine Stage, {GT2025-153075}

Technical Paper Publication

Yoji Okita - Japan Aerospace Exploration Agency (JAXA)
Junichi Kazawa - Japan Aerospace Exploration Agency (JAXA)
Takashi Yamane - Japan Aerospace Exploration Agency (JAXA)
Nozomi Tanaka - IHI Corporation
Kazutaka Fuchigami - IHI Corporation
Hiroki Sato - IHI Corporation
Masaaki Hamabe - IHI Corporation
Haruyuki Tanimitsu - IHI Corporation

Effect of Purge-Mainstream Density Ratio on the Secondary Flow Field of a Turbine Blade Row, {GT2025-154120}

Technical Paper Publication

Katherine Porter - University of Bath
Simon Vella - University of Bath
Alex Mesny - University of Bath
Yan Sheng Li - Siemens-Energy Industrial Turbomachinery Ltd.
Oliver Pountney - University of Bath
Carl Sangan - University of Bath

04-24 Combustion Dynamics - Flame Response

6/18/2025

1:30 PM to 3:30 PM - 108

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Veeraraghava Raju Hasti - UCF**

Chair: **Luis Tay-Wo-Chong - Ansaldo Energia**

Presentations:

Thermo-Acoustic Instabilities and Shape Bifurcations of a Pilot-Only Spray Flame in a Staged Burner, {GT2025-152124}

Technical Paper Publication

Quentin Buisson - EM2C Laboratory
Antoine Renaud - EM2C Laboratory
Laurent Zimmer - EM2C Laboratory
Guillaume J. J. Fournier - Safran Tech
Abel Faure-Beaulieu - Safran Aircraft Engines
Yoann Méry - Safran Aircraft Engines
Sébastien Ducruix - EM2C Laboratory

An Industry Approach of Aero-Engine Fuel Spray Nozzle Optimization for Thermoacoustics, {GT2025-152643}

Technical Paper Publication

Claus Lahiri - Rolls-Royce Deutschland Ltd & Co KG
Andre Fischer - Rolls-Royce Deutschland Ltd & Co KG
Manuel Gonzalez-Flesca - Rolls-Royce plc
Juan Carlos Roman Casado - Rolls-Royce plc
Leo Mesquita - Rolls-Royce plc

04-33 Combustion Experiments II

6/18/2025

1:30 PM to 3:30 PM - 109 A/B

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Benjamin Akih Kumgeh -**

Chair: **Pratikash Panda -**

Presentations:

Coherent Anti-Stokes Raman Spectroscopy Temperature Measurements in a Swirl-Stabilized Spray Combustor, {GT2025-151907}

Technical Paper Publication

Nicholas Rock - Spectral Energies, LLC

Scott Stouffer - University of Dayton Research Institute,

Tyler Hendershott - University of Dayton Research Institute

Edwin Corporan - Air Force Research Laboratory

Paul Wrzesinski - Federal Aviation Administration

Operability Study With Spatial Resolved Temperature and Water Molar Concentration Measurements of a New Pressurised Optical Modular Staged Combustor, {GT2025-152180}

Technical Paper Publication

Anthony Giles - Cardiff University

Lee Weller - University of Cambridge

Burak Goktepe - Cardiff University

Oussama Chaib - University of Cambridge

Priyav Shah - University of Oxford

Ben Williams - University of Oxford

Andrew Crayford - Cardiff University

Daniel Pugh - Cardiff University

Simone Hochgreb - University of Cambridge

Raman Analysis for Gas Turbine Fuel Gas Characterization, {GT2025-152486}

Technical Paper Publication

Daniele Possanzini - Baker Hughes

Maura Pasquotti - Baker Hughes

Heterodyne Background-Oriented Schlieren for Diagnostics of Reactive Flows, {GT2025-152641}

Technical Paper Publication

Sami Tasmany - Institute for Thermal Turbomachinery and Machine Dynamics, Graz University of Technology

Jakob Woisetschlager - Institute for Thermal Turbomachinery and Machine Dynamics, Graz University of Technology

Johannes Gürtler - Laboratory for Measurement and Sensor System Technique, Faculty of Electrical and Computer Engineering, Technische Universität Dresden

Robert Kuschmierz - Laboratory for Measurement and Sensor System Technique, Faculty of Electrical and Computer Engineering, Technische Universität Dresden

Jürgen Czarske - Laboratory for Measurement and Sensor System Technique, Faculty of Electrical and Computer Engineering, Technische Universität Dresden

10-02 Fan and System Optimisation

6/18/2025

1:30 PM to 3:30 PM - LL8

Chair: **Giovanni Delibra - Sapienza University of Rome**

Chair: **Till M. Biedermann -**

Chair: **Massimo Masi -**

Presentations:

Automated Clustering and the Path Towards Visual Analytics for Enhanced Process Optimization in the Pulp and Paper Industry, {GT2025-153292}

Technical Paper Publication

David Volponi - MAN Energy Solutions Schweiz

Francesco Gant - MAN Energy Solutions Schweiz AG

Axel Fiedler - MAN Energy Solutions Schweiz

Michael Florian Laubscher - MAN Energy Solutions Schweiz AG

Julio José Valero - MAN Energy Solutions Schweiz AG

Aerodynamics Numerical Optimization and Experimental Verification of a Low Reynolds Number Mixed Flow Blower for Multiple Operational Points, {GT2025-154693}

Technical Paper Publication

Thiago Ebel - Concepts NREC

William Thoburn - Dyson Ltd

Michael Collison - Dyson Ltd

Optimization of Centrifugal Fan Design Using Genetic Algorithm and CST Method, {GT2025-152511}

Technical Paper Publication

Erkan Bicer - Istanbul Technical University

Tufan Kumbasar - Istanbul Technical University

Data-Driven AI Surrogate Model for Rapid 3D Flow Approximation in Axial Fans, {GT2025-152434}

Technical Paper Publication

Krishna Srinitha Vithanala - German Aerospace center (DLR)

Marcel Aulich - German Aerospace Center (DLR)

Christian Voß - German Aerospace Center (DLR)

Aysegül Cavus - ebm-papst Mulfingen GmbH & Co. KG

Patrick Buchwald - ebm-papst Mulfingen GmbH & Co. KG

Florian Herbst - German Aerospace Center (DLR)

23-03 Oil & Rolling Element Bearings

6/18/2025

1:30 PM to 3:30 PM - 106

Chair: **Pascal Jolly - Université Poitiers**

Chair: **Jurg Schiffmann -**

Chair: **Antoine Mariot -**

Presentations:

Nonlinear Transient Analysis of Tilting Pad Journal Bearings Under Starved Lubrication, {GT2025-151636}

Technical Paper Publication

Tasuku Masuda - Department of Mechanical Systems Engineering, Nagoya University

Tsuyoshi Inoue - Department of Mechanical Systems Engineering, Nagoya University

Application of MPS Method for Heat Exchange Simulation in Tilting Pad Journal Bearings: Internal Cooling With Gyroid Lattice, {GT2025-152030}

Technical Paper Publication

Ludovico Dassi - Politecnico di Milano, Dipartimento di Meccanica

Steven Chatterton - Politecnico di Milano

Matteo Marinoni - Franco Tosi Meccanica

Edoardo Gheller - Politecnico di Milano
Andrea Riva - Politecnico di Milano
Paolo Pennacchi - Politecnico di Milano

A Novel Approach for Diagnostic of Aeroderivative GT Roller Bearings Through Ultrasonic Reflectometry Combined With Acoustic Emissions, {GT2025-152401}

Technical Paper Publication

Christian Patrizio - Baker Hughes
Lorenzo Naldi - Baker Hughes
Matthew Harmon - Tribosonics Ltd
Phil Harper - Tribosonics Ltd

Investigation of Air Flow in Turbomachinery Bearings Using a Computational Fluid Dynamics Approach, {GT2025-152538}

Technical Paper Publication

Sampath Rachakonda - Zulu Pods Inc.
Marios Soteriou - Zulu Pods Inc.
Adam Smedresman - Zulu Pods Inc.
Todd Currier - Zulu Pods Inc.

03-02 Advanced Modeling and Retrofit Techniques for Hydrogen and Mixed-Fuel Combustion Systems

6/18/2025

1:30 PM to 3:30 PM - 105

Chair: **Domenico Borello - Università di Roma La Sapienza**

Chair: **Angela Serra - Baker Hughes**

Chair: **Luca Lombardozi -**

Chair: **Luca Mazzotta - La Sapienza**

Presentations:

Retrofit of a 100 kW Micro Gas Turbine for the Use of Hydrogen and Mixtures of Hydrogen and Natural Gas, {GT2025-153827}

Technical Paper Publication

Martina Hohloch - German Aerospace Center (DLR)
Timo Lingstädt - German Aerospace Center (DLR)
Peter Kutne - German Aerospace Center (DLR)
Markus Wächter - Power Service Consulting GmbH (PSC)
Philipp Körner - Power Service Consulting GmbH (PSC)
Tze-Yeung Cheung - Power Service Consulting GmbH (PSC)

Machine Learning Modelling of Impinging Hydrogen Gas Leaks, {GT2025-154095}

Technical Paper Publication

Davide Cerbarano - Sapienza University of Rome
Lorenzo Tieghi - University of Trento
Giovanni Delibra - Sapienza University of Rome
Stefano Minotti - Baker Hughes
Alessandro Corsini - Sapienza University of Rome

LES-FGM of Hydrogen Enriched Jet in Crossflow Flames, {GT2025-154171}

Technical Paper Publication

Yonduck Sung - Solar Turbines
Priyank Saxena - Solar Turbines
Rajeshriben Patel - Solar Turbines
Michael Ramotowski - Solar Turbines
Miguel Valles Castro - Colorado State University
Bret Windom - Colorado State University

Computational Fluid Dynamics Modeling of Steam Co-Gasification of Biochar and Waste Mixed Plastic in Downdraft Fixed Bed Reactor, {GT2025-153953}

Technical Paper Publication

Md Mahmudul Hasan - Georgia Southern University

Brandon O' Brien - Georgia Southern University

Prakash Bhoi - Georgia Southern University

40-02: Axial Compressor Instabilities and Stall

6/18/2025

1:30 PM to 3:30 PM - LL1

Chair: **Alexander Hergt -**

Chair: **Tianyu Pan - BEIHANG UNIVERSITY**

Chair: **Zhaoqi Yan - Beihang University**

Presentations:

A System for Identifying Compressor Operating Limits in Gas Turbine Engines, {GT2025-151708}

Technical Paper Publication

Anh Pham Cong - Viettel Aerospace Institute, Viettel Group

Hung Vu Xuan - Viettel Aerospace Institute, Viettel Group

Lanh Chu Duy - Viettel Aerospace Institute, Viettel Group

Minh Nguyen Phi - Viettel Aerospace Institute, Viettel Group

Anh Pham Tuan - Viettel Aerospace Institute, Viettel Group

Long Bui Xuan - Viettel Aerospace Institute, Viettel Group

Vinh Ngo Ngoc - Viettel Aerospace Institute, Viettel Group

Dung Pham Ngoc - Viettel Aerospace Institute, Viettel Group

Analysis of Unsteady Flow Features in a Multi-Stage Compressor Operating Near the Stability Boundary, {GT2025-151945}

Technical Paper Publication

Connor McLeod - Imperial College London

John Dodds - Rolls-Royce plc

Giorgio Occhioni - Rolls-Royce plc

Sina Stapelfeldt - Imperial College London

Surge and Rotating Stall Detection for Axial Compressor Flow Based on Self-Organizing Map, {GT2025-152088}

Technical Paper Publication

Hironori Miyazawa - Tohoku University

Yoshihiro Kitamura - Tohoku University

Takashi Furusawa - Tohoku University

Satoru Yamamoto - Tohoku University

Kentaro Nakayama - Kawasaki Heavy Industries, Ltd.

Naoyuki Niwa - Kawasaki Heavy Industries, Ltd.

Naoki Kanazawa - Kawasaki Heavy Industries, Ltd.

Validation of Compressor Surge Rundown Trajectories: Comparative Analysis of Transient Model Predictions and Test Rig Measurements, {GT2025-151663}

Technical Paper Publication

Ola Ilseth Pronk - Norwegian University of Science and Technology (NTNU)

Alberto Serena - Norwegian University of Science and Technology

Lars Eirik Bakken - Norwegian University of Science and Technology (NTNU)

37-02 Radial Turbomachinery Design

6/18/2025

1:30 PM to 3:30 PM - LL3

Chair: **Bob Mischo - MAN Energy Solutions**

Chair: **Martina Ricci -**

Chair: **Michele Marconcini - University of Florence**

Presentations:

Cryogenic Radial Turbine Design for High-Efficiency Hydrogen Liquefaction Plants, {GT2025-151238}

Technical Paper Publication

Alicia Torres Gomez - University of Cambridge

James Brind - University of Cambridge

Graham Pullan - University of Cambridge

Design and Optimization of a Vaned Diffuser for a Transonic Centrifugal Compressor Based on 3D Inverse Design Approach, {GT2025-154277}

Technical Paper Publication

Peng Wang - Advanced Design Technology (Shanghai) Limited

Mingding Zhang - Advanced Design Technology (Shanghai) Ltd

Mehrdad Zangeneh - University College London

High Temperature Multistage Centrifugal Compressor Design Challenges, {GT2025-153975}

Technical Paper Publication

Alice Foschini - Baker Hughes

Rossella Freschi - Baker Hughes

Dario Matina - Baker Hughes

Ernani Fulvio Bellobuono - Baker Hughes

01-12 Electrified Propulsion and Novel Cycles II

6/18/2025

1:30 PM to 3:30 PM - 111

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**

Chair: **Curtis Vedder - Honeywell**

Chair: **Wilfried Visser - TU Delft**

Chair: **Alexander Görtz - German Aerospace Center (DLR)**

Presentations:

Mapping the Potential of Hybrid Electric Architectures for Commuter Aircraft, {GT2025-153111}

Technical Paper Publication

Dimitrios Bermperis - Mälardalen University

Mavroudis Kavvalos - German Aerospace Center (DLR)

Stavros Vouros - Mälardalen University

Konstantinos G. Kyprianidis - Mälardalen University

High Voltage Turboelectric Testbed Design, Integration, and Performance, {GT2025-154127}

Technical Paper Publication

Joshua Drake - Oklahoma State University

Joshua Johnsen - Oklahoma State University

Joshua Melvin - Oklahoma State University

Ryan Paul - Oklahoma State University

Kurt Rouser - Oklahoma State University

Nathan Wisniewski - Oklahoma State University

A Comprehensive Simulation Approach for Maintenance Costs of Future Aircraft Engines Using the Example of Hybrid-Electric Propulsion, {GT2025-151447}

Technical Paper Publication

Maximilian Bien - Technische Universität Braunschweig

Sebastian Lück - Technische Universität Braunschweig

Jens Friedrichs - Technische Universität Braunschweig

Jan Göing - Technische Universität Braunschweig

Fuel Conditioning System Modeling for Liquid Hydrogen-Powered Aircraft, {GT2025-152664}

Technical Paper Publication

Avinash Renuke - Malardalen University

Konstantinos Kyprianidis - Malardalen University

Dimitrios Bermperis - Malardalen University

Jim Claesson - Modelon AB

09-02 / 30-13 joint session: Pumped Thermal Energy Storage

6/18/2025

1:30 PM to 3:30 PM - 113

Chair: **Ty Neises - National Renewable Energy Laboratory**

Chair: **David Sanchez - University of Seville**

Chair: **Ladislav Vesely -**

Presentations:

Part Load Operation of Kilo-Watt Scale Thermally Integrated Supercritical CO₂ Pumped Thermal Energy Storage, {GT2025-154187}

Technical Paper Publication

Syed Safeer Mehdi Shamsi - University of Genoa

Stefano Barberis - University of Genoa

Kiavash Kamali - Politecnico di Milano

Alessandro Romei - Politecnico di milano

Giacomo Persico - Politecnico di milano

Alberto Traverso - University of Genoa

Part Load Management Analysis of a sCO₂ Based Thermally Integrated Pumped Thermal Energy Storage, {GT2025-154114}

Technical Paper Publication

Stefano Barberis - University of Genoa

Safeer Mehdi Shamsi - University of Genova

Silvia Trevisan - KTH

Rafael Guedez - KTH

Thermodynamic Trade-Offs in Brayton High-Temperature Heat Pumps: Impact of Compressor Performance and Heat Exchanger Size, {GT2025-153826}

Technical Paper Publication

Matteo Benvenuti - University of Pisa

Guido Francesco Frate - University of Pisa

Lorenzo Ferrari - University of Pisa

33-04 Experimental methods and modeling for deposition, erosion and fouling

6/18/2025

1:30 PM to 3:30 PM - LL4

Chair: **Jeffrey Bons - The Ohio State University**

Chair: **Todd Lowe - Virginia Tech**

Presentations:

An Experimental Investigation Into Particle Deposition in Double-Wall Effusion Cooling Systems, {GT2025-152405}
Technical Paper Publication

Michael Van De Noort - University of Oxford

Charlie Hickling - Rolls-Royce PLC.

Florian Villain - University of Oxford

Peter Ireland - University of Oxford

David Gillespie - University of Oxford

Janendra Telisinghe - Rolls-Royce PLC.

Effect of Surface Roughness, Contact Angle, and Temperature on Salt Crystallization From Sessile Drops, {GT2025-151404}

Technical Paper Publication

Sadikshya Pandey - University of Minnesota

David L. Poerschke - University of Minnesota

Study of an Additively Manufactured Permanent Strainer for Turbomachinery Application, {GT2025-152171}

Technical Paper Publication

Francesco Capanni - Baker Hughes

Stefano Minotti - Baker Hughes

Francesco Morante - Baker Hughes

Aleli Sosa Chavez - Baker Hughes

18-03: Advanced Manufacturing & Design

6/18/2025

1:30 PM to 3:30 PM - LL9

Chair: **Scott Keller - Doosan Turbomachinery Services**

Chair: **Ramesh Chandra Raju Keshava Bhattu -**

Chair: **Taylor Robertson -**

Chair: **Alex Bridges -**

Chair: **Martin Seimann -**

Chair: **Rainer Horstkotte -**

Presentations:

Methodical Evaluation of Process Chains for the Manufacturing of Rotating Engine Components – Profiled Slots in Turbine Discs, {GT2025-151442}

Technical Paper Publication

Martin Seimann - Fraunhofer Institute for Production Technology IPT

Daniel Heinen - Fraunhofer Institute for Production Technology IPT

Pascal Rohe - Fraunhofer Institute for Production Technology IPT

Sascha Gierlings - Fraunhofer IPT

Thomas Bergs - Manufacturing Technology Institute MTI of RWTH Aachen

Assessing Refractory High Entropy Alloys for Potential High Temperature Applications, {GT2025-151975}

Technical Paper Publication

Aron Mohammadi - Carleton University

Jonathan Tsang - National Research Council of Canada

Xiao Huang - Carleton University

Richard Kearsey - National Research Council of Canada

Production of Fuel Cells for Aviation: Fields of Action for the Improvement of the Gravimetric Power Density and the Quality Assurance, {GT2025-152442}

Technical Paper Publication

Rainer Horstkotte - Fraunhofer Institute for Production Technology IPT
Sascha Gierlings - Fraunhofer Institute for Production Technology IPT
Jan Sommer - Manufacturing Technology Institute MTI of RWTH Aachen University
Max Meerkamp - Manufacturing Technology Institute MTI of RWTH Aachen University
Lars Uhlmann - Manufacturing Technology Institute MTI of RWTH Aachen University
Tim Herrig - Manufacturing Technology Institute MTI of RWTH Aachen University
Thomas Bergs - Manufacturing Technology Institute MTI of RWTH Aachen University

Evaluation of Performance Characteristics of a Surface Texturized Metallic Seal Using Helium Mass Spectrometry and Numerical Simulation, {GT2025-153346}

Technical Paper Publication

Ryan Plessinger - Technetics Group
Erin Volpe - Technetics Group
Florent Ledrappier - Technetics Group
Jean-Francois Juliaa - Technetics Group
Elaine Motyka - Technetics Group
Stefan Roeseler - Technetics Group
Tyler Noyes - Technetics Group
Becca Jones - Technetics Group
Shannon Depratter - Technetics Group
Jonathan Kweder - Technetics Group

06-03 Fuel Cell Driven Cycles - I

6/18/2025

1:30 PM to 3:30 PM - 112

Chair: **Ioannis Roumeliotis - Cranfield University**

Chair: **Ward De Paepe - UMONS**

Chair: **Alessandro Sorce - Università degli Studi di Genova**

Chair: **Luca Mantelli - University of Genoa**

Chair: **Nana Zhou - National Energy Technology Laboratory**

Presentations:

Operating Range of Turbocharged Air Supply Systems for PEM Fuel Cell Aircraft Propulsion, {GT2025-151863}

Technical Paper Publication

Jonas Cäsar - RWTH Aachen University
Daniel Weintraub - GasTurb GmbH
Peter Jeschke - RWTH Aachen University

Analysis of PEM System Architectures That Enable Unification of the Aspiration and Cooling Into a Single System, {GT2025-152206}

Technical Paper Publication

Vlad Goldenberg - SoftInWay Inc.
Ben Conser - SoftInWay Inc.
Clement Joly - SoftInWay Inc.
Viktor Yevlakhov - SoftInWay Inc.
Leonid Moroz - SoftInWay Inc.

Comprehensive Analysis of Optimal Thermal Management Strategies in the Atmospheric Solid Oxide Fuel Cell Integrated With Bottoming Cycle, {GT2025-153072}

Technical Paper Publication

Hyerim Kim - Korea Institute of Science and Technology (KIST)
Kyeongsu Kim - Korea Institute of Science and Technology (KIST)
Tong Seop Kim - Inha University

30-07 Turbines

6/18/2025

1:30 PM to 3:30 PM - LL5

Chair: **Timothy Allison - Southwest Research Institute**

Chair: **Jeffrey Moore - Southwest Research Institute**

Chair: **Paolo Gaetani - Politecnico di Milano**

Chair: **Lorenzo Cosimo - Baker Hughes**

Presentations:

Effect of Blade Scalloping on Performance of Inward Radial Flow Supercritical CO₂ Turbines, {GT2025-151991}

Technical Paper Publication

B Aneesh Bhat - Indian Institute of Science

Syed J Hoque - Indian Institute of Science

Pramod Kumar - Indian Institute of Science

Pramodchandra Gopi - Triveni Turbines Limited

CFD Study on S-CO₂ Radial Turbine Experiment for Low Temperature and Pressure Conditions, {GT2025-152827}

Technical Paper Publication

Seungkyu Lee - Korea Advanced Institute of Science and Technology

Jeong Ik Lee - Korea Advanced Institute of Science and Technology

Gihyeon Kim - Korea Advanced Institute of Science and Technology

Jeong Min Baek - Korea Advanced Institute of Science and Technology

An Investigation of the Three-Dimensional and Unsteady Flow in a Multistage Axial sCO₂ Turbine, {GT2025-154030}

Technical Paper Publication

Muhammad Nouman Saleem - Politecnico di Milano

Andrea Paggini - Baker Hughes

Lorenzo Cosi - Baker Hughes

Giacomo Persico - Politecnico di Milano

An Inquiry Into the Aerodynamic and Aeromechanic Aspects of Next-Generation CO₂-SO₂ Power Turbines for Sustainable Applications: The Case of the Desolination Project, {GT2025-153814}

Technical Paper Publication

Alberto Bandini - University of Florence

Lorenzo Arcangeli - Baker Hughes

Andrea Paggini - Baker Hughes

Andrea Nenciolini - Baker Hughes

Mario Iobbi - Baker Hughes

Lorenzo Pinelli - University of Florence

Michele Marconcini - University of Florence

Andrea Arnone - University of Florence

20-03: Hydrogen and Natural Gas Compression and Infrastructure

6/18/2025

1:30 PM to 3:30 PM - 114

Chair: **Jason Wilkes - Southwest Research Institute**

Chair: **Anand Srinivasan -**

Presentations:

The Need for Speed: Technical Options for Hydrogen Compressors, {GT2025-151201}

Technical Paper Publication

Rainer Kurz - RKS Benergy
Klaus Brun - Ebara Elliott Energy
Lutz Bungeroth - Thinktank-H2
Karl Wygant - Ebara Elliott Energy

Hydrogen Demonstration at Chevron's Cymric 31X Cogeneration Site: Solar Centaur 40 SoLoNOx™ Gas Turbine, {GT2025-153041}

Technical Paper Publication

Shirley Yuan - Solar Turbines Incorporated
Dietmar Sauer - Solar Turbines Incorporated
Lauren Lippert - Solar Turbines Incorporated
Jonathan Duckers - Solar Turbines Incorporated
Michael Ramotowski - Solar Turbines
Rob Hiestand - Chevron
Troy Haugeberg - Chevron
Liz Voze - Chevron
James Harper - EPRI
David Noble - EPRI

Scaling Hydrogen Infrastructure: Challenges and Opportunities for OEMs and EPCs in Liquefaction and Compression, {GT2025-153204}

Technical Paper Publication

Matt Taher - Bechtel Energy
Daniel Patrick - Atlas Copco Mafi-Trench Company LLC
Iacopo Gianassi - Baker Hughes
Martin Knoche - Chart Industries
Brian Grosso - Siemens Energy, Inc
Luiz Soriano - NEUMAN & ESSER USA, Inc.

Development of Hydrocarbon Gas Compressor With Integral Motor and Foil Bearing, {GT2025-151989}

Technical Paper Publication

Junghan Lee - Cluster LNG Co., Ltd.
Daehyuk Lee - Cluster LNG Co., Ltd.

13-04: Heat transfer modelling

6/18/2025

4:00 PM to 5:30 PM - LL7

Chair: **James Heidmann -**

Chair: **Silvia Ravelli -**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl Sangan - University of Bath**

Chair: **Jeffrey Bons - The Ohio State University**

Chair: **Randall M. Mathison -**

Presentations:

Modelling of a Compact Heat Exchanger With TPMS Geometry, {GT2025-153280}

Technical Paper Publication

Iñigo Montenegro - ITP Aero
Carlos Pérez - ITP Aero
Antonio Revuelta - ITP Aero

Potential of a Nozzle Guide Vane Cooling Concept Adapted to Circumferential Temperature Variations, {GT2025-152700}

Technical Paper Publication

Robin Schöffler - German Aerospace Center (DLR)

Michael Müller - German Aerospace Center (DLR)
Clemens Grunwitz - German Aerospace Center (DLR)
Robin G. Brakmann - German Aerospace Center (DLR)
Robert Krewinkel - Graz University of Technology

Transient Temperature Field Inversion of Turbine Based on Physics-Encoded Neural Networks, {GT2025-152695}
Technical Paper Publication

Mingyang Hao - Xi'an Jiaotong University
Zhigang Li - Xi'an Jiaotong University
Jun Li - Xi'an Jiaotong University

32-07 Endwall and Secondary Flows

6/18/2025

4:00 PM to 5:30 PM - LL2

Chair: **Paul Giel - NASA Glenn Research Center**

Chair: **Emil Goettlich -**

Chair: **Thomas Praisner - Pratt & Whitney**

Presentations:

Influence of Inlet Flow Profile, Fillet Radius and Trailing Edge Thickness on Secondary Flows in Turbine Vane Cascades, {GT2025-152874}

Technical Paper Publication

Hans Hager - Chair of Turbomachinery and Flight Propulsion, Technische Universität Dresden
Martin Lange - Chair of Turbomachinery and Flight Propulsion, Technische Universität Dresden
Anna-Lisa Laufer - GE Aerospace Advanced Technology
Marios Patinios - GE Aerospace Advanced Technology
Ronald Mailach - Chair of Turbomachinery and Flight Propulsion, Technische Universität Dresden

Performance of Adjoint-Optimized Contoured Endwalls for Multiple Off-Design Purge Flow Rates in Axial Turbines, {GT2025-154078}

Technical Paper Publication

Austin Hendrickson - The Ohio State University
Spencer Sperling - Honeywell Aerospace Technologies
Bao Nguyen - Honeywell Aerospace Technologies
Richard Celestina - Honeywell Aerospace Technologies
Jong Liu - Honeywell Aerospace Technologies
Hakan Aksoy - Honeywell Aerospace Technologies
Jeremy Nickol - Honeywell Aerospace Technologies
Randall Mathison - The Ohio State University
Evan Sears - The Ohio State University

Secondary Flow Losses Mitigation for Low-Pressure Turbine Cascade Using Response Surface Optimization, {GT2025-154131}

Technical Paper Publication

Anand Darji - Caterpillar India Pvt Ltd.
Beena Baloni - Sardar Vallabhbhai National Institute of Technology - Surat
Chetan Mistry - Indian Institute of Technology - Kharagpur

31-08 Fan Inlet Distortion I

6/18/2025

4:00 PM to 5:30 PM - LL1

Chair: **Lisa Brilliant - Pratt & Whitney**
Chair: **Daniel Wilkin II - GE Aerospace**
Chair: **Shreyas Hegde -**
Chair: **Richard Hollenbach -**
Presentations:

Analysis of Radial Inlet Distortion on Transonic Fan Performance, {GT2025-154181}
Technical Paper Publication
Tyler Reedy - Brigham Young University
Steve Gorrell - Brigham Young University

Extension of the Throughflow Solver for Predicting the Aerodynamic Performance of Fans With Inlet Distortion, {GT2025-153689}
Technical Paper Publication

Djordje Petkovic - University of Belgrade, Faculty of Mechanical Engineering
Milan Banjac - University of Belgrade, Faculty of Mechanical Engineering
Teodora Madzar - University of Belgrade, Faculty of Mechanical Engineering
Srdjan Milic - University of Belgrade, Faculty of Mechanical Engineering
Milan V. Petrovic - University of Belgrade, Faculty of Mechanical Engineering
Satoshi Yamashita - Turbomachinery No.2 Laboratory, Turbomachinery Research Department, Research & Innovation Center, Mitsubishi Heavy Industries, Ltd.
Yuji Koike - Turbomachinery No.2 Laboratory, Turbomachinery Research Department, Research & Innovation Center, Mitsubishi Heavy Industries, Ltd.

Impact of Fan Aerodynamics on Inlet Distortion at Crosswind, {GT2025-153306}
Technical Paper Publication

Venkata y.t. Chennuru - Universidad Politécnica de Madrid
Roque Corral García - Universidad Politécnica de Madrid
Fanzhou Zhao - Imperial College London
Salvador Rodríguez-Blanco - Universidad Politécnica de Madrid
Mehdi Vahdati - Universidad Politécnica de Madrid

14-05: Turbine Rim Seal and Rotor-Stator Cavity 2

6/18/2025

4:00 PM to 5:30 PM - LL6

Chair: **Jens Fridh -**
Chair: **Hui Tang - University of Bath**
Chair: **Michael D. Barringer - Penn State**
Chair: **Lesley Wright - Texas A&M University**
Chair: **Carl M. Sangan -**
Chair: **John Blanton - Classic Engineering, LLC**
Presentations:

Numerical Analysis of Sealing Flows in Gas Turbines Using RANS and LES Approaches, {GT2025-153660}
Technical Paper Publication

Alessio Di Geronimo - University of Florence
Lorenzo Orsini - University of Florence
Antonio Andreini - University of Florence
Alessio Bonini - Baker Hughes

Scaling Sealing Performance Across Engine Operating Conditions, {GT2025-152884}
Technical Paper Publication

Simon Vella - University of Bath
Francesco Salvatori - Safran Aircraft Engines
James A. Scobie - University of Bath

Gary D. Lock - University of Bath
Carl M. Sangan - University of Bath
Hui Tang - University of Bath

34-06 Geometry and fluid-structure interaction

6/18/2025

4:00 PM to 5:30 PM - LL4

Chair: **Jeff Defoe** -

Chair: **Michael Barton** -

Chair: **Hien Phan** -

Presentations:

Examining the Potential of High-Order SRS to Support RANS-Based Compressor Airfoil Optimization, {GT2025-153540}

Technical Paper Publication

Georgios Goinis - German Aerospace Center (DLR)

Sutharsan Satcunanathan - German Aerospace Center (DLR)

Michael Bergmann - German Aerospace Center (DLR)

Advancing Turbomachinery Meanline Modeling and Optimization With Automatic Differentiation, {GT2025-153217}

Technical Paper Publication

Srinivas Prakash Diwanji - Technical University of Denmark

Lasse Borg Anderson - SINTEF

Roberto Agromayor - Technical University of Denmark

Fredrik Haglind - Technical University of Denmark

A Mesh Motion Methodology for Efficient Flutter Simulations, {GT2025-153841}

Technical Paper Publication

Salvador Rodriguez - Universidad Politécnica de Madrid

Roque Corral - Universidad Politécnica de Madrid

04-18 Kinetics I

6/18/2025

4:00 PM to 5:30 PM - 109 A/B

Chair: **Samir Rida** -

Chair: **David Noble** - EPRI

Chair: **Gilles Bourque** - McGill University

Chair: **Kiran Manoharan** - Honeywell

Chair: **Ponnuthurai Gokulakrishnan** - Combustion Science & Engineering

Presentations:

Chemical Reactor Network Modeling of Ammonia Rich-Quench-Lean Combustion Using a Partially Stirred Reactor Approach, {GT2025-152893}

Technical Paper Publication

Clinton Bedick - U.S. Department of Energy National Energy Technology Laboratory

Wesley Boyette - U.S. Department of Energy National Energy Technology Laboratory

High-Temperature Measurements of NH₂ and NH₃ for Resolving Ammonia Kinetics, {GT2025-152983}

Technical Paper Publication

Matthew Abulail - Texas A&M University

Claire M. Grégoire - Texas A&M University
Olivier Mathieu - Texas A&M University
Eric L. Petersen - Texas A&M University

Reactor Network Analysis of a Novel Combustion Concept Based on the Heat Exchange Between Fuel Rich Products and By-Pass Air, {GT2025-153108}

Technical Paper Publication

Fernando Biagioli - Infosys
Holger Luebcke - Infosys
Khawar J. Syed - Crosstown H2R

07-01: Education

6/18/2025

4:00 PM to 5:30 PM - LL9

Chair: **Ioanna Aslanidou - Mälardalen University**

Chair: **Dimitra-Eirini Diamantidou - MTU Aero Engines**

Chair: **Prashant Khare - University of Cincinnati**

Presentations:

Teaching Aero-Engine Performance: Performance Analysis of Single-Spool and Two-Spool Engines, {GT2025-153845}

Technical Paper Publication

Daniel Weintraub - RWTH Aachen - Institute of Jet Propulsion and Turbomachinery
Christian Klumpp - RWTH Aachen - Institute of Jet Propulsion and Turbomachinery
Peter Jeschke - RWTH Aachen - Institute of Jet Propulsion and Turbomachinery

An Integrative Course in Turbomachine Design, Manufacturing, and Measurement, {GT2025-152137}

Technical Paper Publication

Joseph Chiappari - Massachusetts Institute of Technology
Joachim Bron - Massachusetts Institute of Technology
David Gregory - New Frontier Aerospace
Jessie Stickgold-Sarah - Massachusetts Institute of Technology
Zoltan Spakovszky - Massachusetts Institute of Technology
Zachary Cordero - Massachusetts Institute of Technology

Assessing the E2E Sustainable Propulsion Undergraduate Education and Research Program, {GT2025-151877}

Technical Paper Publication

David Gray - Virginia Tech
Karen Martinez Soto - Syracuse University
Charles Haldeman - Pratt and Whitney
Todd Lowe - Virginia Tech

27-04: Methods and Modeling in Rotordynamics

6/18/2025

4:00 PM to 5:30 PM - 107 A/B

Chair: **Filippo Cangioli - Waukesha Bearings**

Chair: **Parag Mathuria - Pratt & Whitney**

Chair: **Edoardo Gheller - Turboden spa**

Presentations:

Evaluation of Quasi-Periodic Oscillations for the Dynamic Design of Dual Spool Jet Engines Utilizing a Solution of the Invariant Manifold, {GT2025-151368}

Technical Paper Publication

*Emmanouil Dimou - National Technical University of Athens
Konstantinos Kavvadas - National Technical University of Athens
Ino Stylianopoulou - National Technical University of Athens
Vasileios Veloudis - National Technical University of Athens
Athanasios Chasalevris - National Technical University of Athens*

Integer Fractional Frequency Whirl in a Squeeze-Film-Damper Supported Rotor System, {GT2025-153417}

Technical Paper Publication

Theodore Brockett - Honeywell Aerospace

Hirth Coupling Modeling and Optimization on Rotor Assembly, {GT2025-153226}

Technical Paper Publication

*Antonio De Rose - Politecnico di Milano
Luca Fantaccione - Baker Hughes
Paolo Emilio Lino Maria Pennacchi - Politecnico di Milano*

02-01 Ceramic Matrix Composites

6/18/2025

4:00 PM to 5:30 PM - LL8

Chair: **Michael Presby -**

Chair: **Spencer Jeffs - Swansea**

Presentations:

High Temperature Mechanical Assessment of a SiCf/SiC Ceramic Matrix Composite in a Vacuum Environment, {GT2025-151516}

Technical Paper Publication

*Spencer Jeffs - Swansea University
Christopher Newton - National Composites Centre
Sean John - Swansea University
Martin Bache - Swansea University
Louise Gale - Rolls-Royce plc
Gonzalo García Luna - Rolls-Royce plc*

Development of Hot Gas Resistant Continuous Fibre-Reinforced Ti2AlC MAX-Phases for Energy Applications, {GT2025-151285}

Technical Paper Publication

*Fabian Jung - Institut fuer Textiltechnik of RWTH Aachen University
Lukas Aretz - Institute of Mineral Engineering of RWTH Aachen University
An Ye - Institute of Mineral Engineering of RWTH Aachen University
Thomas Gries - Institut fuer Textiltechnik of RWTH Aachen University*

Synergy Effects of Ceramic Matrix Composites Under Engine Environments, {GT2025-153964}

Technical Paper Publication

*Sung R. Choi - Naval Air Systems Command (NAVAIR)
Jacob T. Mattison - Naval Air Systems Command
Andrew S. Jamieson - Naval Air Systems Command
D. Calvin Faucett - Naval Air Systems Command*

01-02 Inlet Distortion and Engine Operability I

6/18/2025

4:00 PM to 5:30 PM - 111

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**
Chair: **Curtis Vedder - Honeywell**
Chair: **Georgios Goinis - DLR**
Chair: **William Cousins - Aerodynamic Technology Consulting LLC**
Presentations:

Impact of Endwall Clearances on Off-Design Performance of Boundary Layer Ingesting Variable Pitch Fans, {GT2025-151359}

Technical Paper Publication

John Paul Panuthara - German Aerospace Center (DLR)
Maximilian Mennicken - German Aerospace Center (DLR)
Rainer Schnell - German Aerospace Center (DLR)
Nick Gottschalk - TU Braunschweig
Sandra Kleemann - Oswald Elektromotoren GmbH
Thomas Reis - Oswald Elektromotoren GmbH
Jens Friedrichs - TU Braunschweig
Florian Herbst - German Aerospace Center (DLR)

The INFra Rig: Validating High-Fidelity Fan-Intake Simulations in a Crosswind Facility, {GT2025-151628}

Technical Paper Publication

Maximilian Mennicken - German Aerospace Center (DLR), Institute of Propulsion Technology
Jonas Grubert - TU Braunschweig
Patrick Brunow - TU Braunschweig
Jens Friedrichs - TU Braunschweig
Jan Goessling - Leibniz University Hannover
John Paul Panuthara - German Aerospace Center, Institute of Propulsion Technology
Pierre Sivel - German Aerospace Center (DLR), Institute of Propulsion Technology
Rainer Schnell - German Aerospace Center (DLR), Institute of Propulsion Technology

On Runway Foreign Object Ingestion With a Variable Pitch Fan in Reverse Thrust Mode, {GT2025-151271}

Technical Paper Publication

Dimitrios Vitlaris - Cranfield University
David Rajendran - Cranfield University
Richard Tunstall - Rolls-Royce plc
Barry Moore - Rolls-Royce plc
Rory Clarkson - Rolls-Royce plc
Vassilios Pachidis - Cranfield University

19-03 Compressors and pumps

6/18/2025

4:00 PM to 5:30 PM - 114

Chair: **Aaron Rimpel - Southwest Research Institute**
Chair: **Grzegorz Liskiewicz -**
Chair: **Mihai Mihaescu -**
Presentations:

Analysis of New Refrigerant As Drop-in Replacement on Centrifugal Compressors, {GT2025-152094}

Technical Paper Publication

Yintao Wang - Danfoss
Tadeu Mendonca Fagundes - Danfoss
Ryan Dingman - Danfoss
Jin Yan - Danfoss Turbocor Inc

Insights Into the Cavitation Behaviour of a Boundary Layer Pump, {GT2025-153713}

Technical Paper Publication

*Agapi Bakogianni - Cranfield University
David John Rajendran - Cranfield University
Eduardo Anselmi Palma - Cranfield University
Vassilios Pachidis - Cranfield University
Chloe Jo Palmer - Rolls-Royce plc*

Classification of Compressors Stability Using an Image Recognition Machine Learning Model, {GT2025-154137}

Technical Paper Publication

*Pawel Pluciennik - Lodz University of Technology
Magdalena Jaskiewicz - Digica
Grzegorz Liskiewicz - Texas A&M*

41-04 Offshore Wind Energy

6/18/2025

4:00 PM to 5:30 PM - LL10

Chair: **Giacomo Persico - Politecnico di Milano**

Chair: **Lorenzo Ferrari - University of Pisa**

Chair: **Ramy Imam - LAUTEC Group**

Presentations:

Optimized H-Shaped VAWT for Tilted Operation: CFD Evaluation of Design and Off-Design Conditions, {GT2025-153668}

Technical Paper Publication

*Otman Kouaissah - University of Bergamo
Nicoletta Franchina - University of Bergamo
Giacomo Persico - Politecnico of Milan
M. Salman Siddiqui - Norwegian University of Life Sciences*

28-03: Modeling and simulation

6/18/2025

4:00 PM to 5:30 PM - 106

Chair: **Luigi Carassale -**

Chair: **Sean Kelly - Los Alamos National Laboratory**

Chair: **Kiran D'souza - Ohio State University**

Presentations:

Numerical Evaluation of High-Pressure Supercritical CO₂ Effect on the Axial Turboexpander Blades Natural Frequencies, A Case Study, {GT2025-154050}

Technical Paper Publication

*Francesca Acquaroli - Baker Hughes
Leonardo Tognarelli - Baker Hughes*

Application of Deep Learning for Stress Prediction Under Fan Blade Out Loads in Turbofan Engine, {GT2025-152005}

Technical Paper Publication

*Ufuk Kortag - Tusas Engine Industries, Inc.
Onur Agdaci - Tusas Engine Industries, Inc.*

06-04 Fuel Cell Driven Cycles - II

6/18/2025

4:00 PM to 5:30 PM - 112

Chair: **Ioannis Roumeliotis - Cranfield University**

Chair: **Ward De Paepe - UMONS**

Chair: **Alessandro Sorce - Università degli Studi di Genova**

Chair: **Theoklis Nikolaidis - University of Patras**

Chair: **Evangelia Pontika - Cranfield University**

Presentations:

Multi-Objective Optimization of an SOFC-GT-ORC Integrated Multi-Generation System With Liquefied Natural Gas As Cold Source Based on Intelligence Method, {GT2025-153939}

Technical Paper Publication

Wei Feng - CNOOC Gas and Power Group

Junyi Zhang - Xi'an Jiaotong University

Li Xiao - CNOOC Gas and Power Group

Fan Yang - CNOOC Gas and Power Group

Tao Song - CNOOC Gas and Power Group

Liang Tian - CNOOC Gas and Power Group

Xu Yan - CNOOC Gas and Power Group

Jiangfeng Wang - Xi'an Jiaotong University

Design of a Turbocharged PEMFC System for Aviation, {GT2025-154092}

Technical Paper Publication

Federico Iester - Università degli Studi di Genova

Luca Mantelli - Università degli Studi di Genova

Silvia Crosa - Università degli Studi di Genova

Loredana Magistri - Università degli Studi di Genova

Aristide Massardo - Università degli Studi di Genova

Michele Bozzolo - University of Genova

Andrea Cino - Rolls-Royce plc.

Phil Butler - Rolls-Royce plc.

Jacopo Tacconi - Rolls-Royce plc.

Off-Design Performance Analysis of a Turbocharged PEMFC System for Aviation, {GT2025-154104}

Technical Paper Publication

Luca Mantelli - Università degli Studi di Genova

Federico Iester - Università degli Studi di Genova

Silvia Crosa - Università degli Studi di Genova

Loredana Magistri - Università degli Studi di Genova

Michele Bozzolo - University of Genoa

Jacopo Tacconi - Rolls-Royce plc.

Phil Butler - Rolls-Royce plc.

Andrea Cino - Rolls-Royce plc.

30-06 Compressors

6/18/2025

4:00 PM to 5:30 PM - LL5

Chair: **Timothy Allison - Southwest Research Institute**

Chair: **Robert Pelton - Elliott-Turbo**

Chair: **Katharina Tegethoff - University of Cambridge**

Presentations:

Performance Predictions for a Super-Critical CO₂ Compressor Operating Near the Liquid-Vapor Dome, {GT2025-153026}

Technical Paper Publication

Sylvain Pierre - GE Vernova Advanced Research

Ya-Tien Chiu - GE Aerospace Research

Giridhar Jothiprasad - GE Aerospace Research

J. Jeffrey Moore - Southwest Research Institute

CFD Study on S-CO₂ Compressor Boundary Layer Separation During Surge and Stall, {GT2025-153622}

Technical Paper Publication

Gihyeon Kim - Korea Advanced Institute of Science and Technology

Seungkyu Lee - Korea Advanced Institute of Science and Technology

Jeong Ik Lee - Korea Advanced Institute of Science and Technology

THURSDAY, 6/19/2025

13-03: Thermal performance of HRSG and turbine adjustable nozzle guide vane

6/19/2025

8:00 AM to 10:00 AM - LL6

Chair: **Kenneth Moore - Retired**

Chair: **Silvia Ravelli -**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl Sangan - University of Bath**

Chair: **Jeffrey Bons - The Ohio State University**

Chair: **Alexander Mirzamoghadam - Northrop Grumman**

Presentations:

Comparison of Two Different Approaches for Thermal Performance Evaluation of a Heat Recovery Steam Generator, {GT2025-152169}

Technical Paper Publication

Muhammad Adnan Saroosh - ACWA Power

Muhammad Azhar Janjua - ACWA Power

Jalal Hunain Zia - ACWA Power

Ronald Abbas - ACWA Power

Mathew York - ACWA Power

Yahya Zafar - ACWA POWER

Impact of Flow Diverter Baffles on Flow Distribution and Thermal Performance of HRSGs, {GT2025-152189}

Technical Paper Publication

Ronald Abbas - ACWA Power

Muhammad Azhar Janjua - ACWA Power

Jalal Zia - Acwa Power

Muhammad Adnan Saroosh - ACWA Power

Matthew York - Acwa Power

Leakage Flow and Conjugate Heat Transfer Characteristics of Suction Surface Adjustable Guide Vane in Adaptive Cycle Engine, {GT2025-153619}

Technical Paper Publication

Kun Xiao - Nanjing University of Aeronautics and Astronautics

Xiandi Zhao - Nanjing University of Aeronautics and Astronautics

Zhaokai Ma - Nanjing University of Aeronautics and Astronautics

32-08/12-11 joint session: Hot Gas Migration

6/19/2025

8:00 AM to 10:00 AM - LL2

Chair: **Christopher Robak - Pratt & Whitney**

Chair: **Lyle Dailey - GE Aerospace**

Chair: **Lesley Wright - Texas A&M University**

Presentations:

The Use of Artificial Intelligence for Cooling Failure Detection in High-Pressure Turbine Blades, {GT2025-153168}
Technical Paper Publication

Carlo Cravero - DIME, Università di Genova

Davide Marsano - DIME, Università di Genova

Emiliano Valenti - DIME, Università di Genova

A New Test Facility for Investigating Leaf-Seal Cavity Ingestion at Combustor-Turbine Interface, {GT2025-152927}
Technical Paper Publication

Riess Haslam - University of Florence

Alessio Picchi - University of Florence

Riccardo Becchi - University of Florence

Isacco Rafanelli - University of Florence

Antonio Andreini - University of Florence

Maciej Stańczyk - GE Aerospace Poland

Ahmet Yildiz - GE Aerospace

Heat Transfer Analysis in a Turbine Bottom Platform Cavity With Hot Gas Ingestion: An Investigation on the Applicability of the Superposition Approach, {GT2025-151744}
Technical Paper Publication

Marco Hahn - KIT - Institute of Thermal Turbomachinery (ITS)

Jonas Schmid - KIT - Institute of Thermal Turbomachinery (ITS)

Hans-Jörg Bauer - KIT - Institute of Thermal Turbomachinery (ITS)

12-06: General Film Cooling Studies (I)

6/19/2025

8:00 AM to 10:00 AM - LL7

Chair: **Sanjay Chopra - GE Aerospace**

Chair: **Ardeshir Riahi -**

Chair: **Carl Sangan - University of Bath**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Lamyaa El-Gabry -**

Chair: **Jayanta Kapat - University of Central Florida**

Presentations:

An Experimental Investigation of Sweeping Mist Jet Film Cooling With Droplet Analysis, {GT2025-151917}
Technical Paper Publication

Mohammad Javad Mohaghegh Kojidi - University of New Orleans

Ting Wang - University of New Orleans

Setting Robust Manufacturing Tolerances for Turbine Trailing Edge Film Cooling, {GT2025-152251}
Technical Paper Publication

Tassilo von Mueller - University of Oxford

Peter Ireland - University of Oxford

Dougal Jackson - Rolls-Royce PLC

Impact of Internal Crossflow on Flow Topology Inside and Outside of Film Cooling Holes With Varying Inclination and Supply Flow Angles: 3D Velocity Data From Magnetic Resonance Velocimetry, {GT2025-152696}

Technical Paper Publication

*Swantje Romig - University of Rostock
Martin Bruschewski - University of Rostock
Carolin Wüstenhagen - University of Rostock
Sven Grundmann - University of Rostock
Robert Krewinkel - TU Graz*

The Relative Sensitivity of Overall Effectiveness to Thermal Conductivity and Coolant/Freestream Reynolds Numbers, {GT2025-152979}

Technical Paper Publication

*John Di Lella - Air Force Institute of Technology
Bailey Hopkins - Air Force Institute of Technology
James L. Rutledge - Air Force Institute of Technology*

04-10 Combustion Modeling III

6/19/2025

8:00 AM to 10:00 AM - 108

Chair: **Samir Rida -**

Chair: **David Noble - EPRI**

Chair: **Pinaki Pal - Argonne National Laboratory**

Presentations:

Application of Digital Twin Technology to Aeronautical Combustion: A Case Study on Hydrogen Microinjectors, {GT2025-153184}

Technical Paper Publication

*Anouck Deshons - Safran Tech
Julien Leparoux - Safran Tech
Guillaume J. J. Fournier - Safran Tech
Florian Monnier - Ariane Group
Alexis Vandel - CORIA UMR CNRS 6614, INSA Rouen Normandie
Gilles Cabot - CORIA UMR CNRS 6614, Université Rouen Normandie
Frédéric Grisch - CORIA UMR CNRS 6614, INSA Rouen Normandie
Nicholas C. W. Treleaven - Safran Tech*

An Attempt to Include Thermo-Diffusive Instabilities in the Thickened Flame Model: a Case Study, {GT2025-153459}

Technical Paper Publication

*Arun K Ampy - Baker Hughes
Roberto Meloni - Baker Hughes
Giulia Babazzi - Baker Hughes
Francesco D'alessio - Università degli studi di Roma, Sapienza*

Wall-Modeled Large Eddy Simulation of Full Annular Combustor Leveraging GPU Technology, {GT2025-153784}

Technical Paper Publication

*Mohammadreza Farokhi - Ansys Canada Ltd.
Carlo Arguinizoni - Ansys Inc
David Pons - Ansys Inc
Stefano Orsino - Ansys Inc
Adam Norman - Ansys Inc*

Modulation of the Thickened Flame Model Into Eddy Dissipation Concept for Multi-Regime Combustion Modelling, {GT2025-153376}

Technical Paper Publication

Roberto Meloni - Baker Hughes

Naseem Ansari - Ansys Inc

Stefano Orsino - Ansys Inc

Reza Farokhi - Ansys Inc

Simone Castellani - Department of Industrial Engineering University of Florence

Gianmarco Lemmi - Department of Industrial Engineering University of Florence

Antonio Andreini - Department of Industrial Engineering University of Florence

04-34 Combustion Experiments III

6/19/2025

8:00 AM to 10:00 AM - 109 A/B

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Keith McManus - GE Aerospace Research**

Chair: **AKM Nazrul Islam -**

Presentations:

Measurement of Particulate Matter and its Oxidation in a Multi-Sector Rich-Quench-Lean Combustor, {GT2025-153181}

Technical Paper Publication

Jeremiah Juergensmeyer - Georgia Institute of Technology

Russell Mcgrath - Georgia Institute of Technology

Jonathon Miller - Georgia Institute of Technology

Robert Bond - Georgia Institute of Technology

Shawn Wehe - Georgia Institute of Technology

Wenting Sun - Georgia Institute of Technology

Yi Chen Mazumdar - Georgia Institute of Technology

Adam Steinberg - Georgia Institute of Technology

Thermal Crystal Temperature Characterization in a High Temperature, High Pressure Combustion Test Rig, {GT2025-153327}

Technical Paper Publication

Natalie King - Georgia Institute of Technology

Mit Sony - Georgia Institute of Technology

Ari Tretiak - Georgia Institute of Technology

Randal Mckinney - Georgia Institute of Technology

Dibesh Joshi - Pratt & Whitney

Qingguo Zhang - Pratt & Whitney

David Wu - Georgia Institute of Technology

Benjamin Emerson - Georgia Institute of Technology

Assessment of Reconstruction Error for Laser Absorption Tomography Using Large Eddy Simulation Data, {GT2025-153702}

Technical Paper Publication

Esther Neat - Loughborough University

Abhishek Upadhyay - University of Edinburgh

Maxwell A Williams - Loughborough University

Jon F Carrotte - Loughborough University

Michael Lengden - University of Strathclyde

Chang Liu - University of Edinburgh

Andrew Garmory - Loughborough University

Uniform Crystal Temperature Sensor Application on PSM FlameSheet™ Combustor for High Hydrogen Operation, {GT2025-153815}

Technical Paper Publication

Andrew Green - Power Systems Mfg., LLC
Ramesh Keshava Bhattu - Power Systems Mfg., LLC
Bryan Kalb - Power Systems Mfg., LLC
Anastasia Thomas - LG Tech-Link Global, LLC

23-04 Gas Lubricated Journals

6/19/2025

8:00 AM to 10:00 AM - 107 A/B

Chair: **Kostandin Gjika** -

Chair: **Jurg Schiffmann** -

Chair: **Nguyen LaTray** -

Presentations:

Numerical Study and Optimization of Hydrodynamic Herringbone Micro-Grooved Journal Bearing, {GT2025-153012}
Technical Paper Publication

Hara Prakash Mishra - National Institute of Technology, Rourkela
Suraj Kumar Behera - National Institute of Technology, Rourkela

Evaluating the Influence of Different Equations of State on Real Gas Effects in Herringbone Grooved Bearings, {GT2025-154169}

Technical Paper Publication

Roman Kochurov - SoftInWay, Inc.
Volodymyr Martynenko - SoftInWay Switzerland GmbH
Leonid Moroz - SoftInWay, Inc.
Yuriy Govorushchenko - SoftInWay Switzerland GmbH

Numerical Model for Determining the Dynamic Parameters of Gas Journal Bearings With Deformable Porous Media, {GT2025-154269}

Technical Paper Publication

Azael Duran-Castillo - Universidad Autónoma de Querétaro
Juan Jauregui - Universidad Autonoma de Queretaro
Oscar De Santiago - ETU i+D

Complete Secondary Flow Formulation for Thermohydrodynamic Analyses of Multiple Foil Bearings Lubricated With Non-Ideal Gases, {GT2025-153833}

Technical Paper Publication

Daejong Kim - The University of Texas at Arlington

08-01: Gas Turbine Research and Developments

6/19/2025

8:00 AM to 10:00 AM - 113

Chair: **Benjamin Emerson** -

Chair: **Tom Christiansen** - SPS

Chair: **Rick Tomlinson** - Chevron

Chair: **Chris Perullo** - Turbine Logic

Chair: **Corson Teasley** - Turbine Logic

Chair: **Thomas Christiansen** - SPS

Presentations:

Gas Turbine Hot Component LCF Evaluation Based on Notch Bar Specimen, {GT2025-152618}

Technical Paper Publication

*Jimoon Lee - Doosanenerbility
Muhyong Lee - Doosanenerbility*

Development of a Full Scale Retrofittable Ammonia Combustor for Can Annular Frame Engine Implementation, {GT2025-153315}

Technical Paper Publication

*Benjamin Emerson - Georgia Institute of Technology
David Wu - Georgia Institute of Technology
Cristian D. Avila Jimenez - Georgia Institute of Technology
Renee Cole - Georgia Institute of Technology
Jung-Keuk Park - KEPSCO Research Institute in Power Generation Laboratory
Sanghyup Lee - KEPSCO Research Institute in Power Generation Laboratory
James Harper - EPRI
David Noble - EPRI*

Ansaldo Energia's GT26 MXL3 Service Upgrade, {GT2025-152498}

Technical Paper Publication

*Ralf Jakoby - Ansaldo Energia Switzerland
Daniel Burri - Ansaldo Energia Switzerland
Andreas Rüter - Ansaldo Energia Switzerland
Savino Depalo - Ansaldo Energia Switzerland
Stefano Tosin - Ansaldo Energia Switzerland*

Taking the Guesswork Out of Power Plant Dispatch, {GT2025-154036}

Technical Paper Publication

*Corson Teasley - Turbine Logic
Andrew Gerlings - Chevron
Christopher Perullo - Turbine Logic
Lea Boche - EPRI
David Noble - EPRI*

40-03: Compressor Secondary Flows and Interactions

6/19/2025

8:00 AM to 10:00 AM - LL1

Chair: **Alexander Hergt** -

Chair: **David Halstead** -

Chair: **Anand Srinivasan** -

Presentations:

Investigation of Shear Layer Induced Pressure Fluctuations in a Linear Compressor Cascade, {GT2025-151156}

Technical Paper Publication

*Christoph Jasmund - Chair of Turbomachinery and Flight Propulsion, Technische Universität Dresden
Martin Lange - Chair of Turbomachinery and Flight Propulsion, Technische Universität Dresden
Ronald Mailach - Chair of Turbomachinery and Flight Propulsion, Technische Universität Dresden*

An Experimental and Numerical Investigation of the Rotordynamic Coefficients of a Gas Labyrinth Seal: Part 2 - Numerical Simulation Revised Version, {GT2025-153994}

Technical Paper Publication

*Ciprian Comsa - Texas A&M University - Department of Aerospace Engineering
Paul Cizmas - Texas A&M University - Department of Aerospace Engineering*

Unsteady Flow Analysis of the Full Annulus and Complete Low-Pressure ENOVAL Transonic Compressor, {GT2025-154118}

Technical Paper Publication

Julien Marty - ONERA
Mohamed Amine Chemak - SAFRAN TECH
Sébastien Bourasseau - ONERA
Marc Chauvy - SAFRAN TECH
Nicolas Habotte - SAFRAN AERO BOOSTERS

Aerodynamic Force Modelling of Free and Shrouded Propellers in Incidence for Low Subsonic VTOL Operations, {GT2025-152175}

Technical Paper Publication

Sanjana Gummekeri Krishna - Safran Tech
Ye-Bonne Maldonado - Safran Tech
Ludovic Wiart - Safran Tech
Benoit Rodriguez - Safran Tech
Sébastien Duplaa - ISAE-SUPAERO
Xavier Carbonneau - ISAE-SUPAERO

40-06: Turbine Secondary Flows and Interactions I

6/19/2025

8:00 AM to 10:00 AM - LL3

Chair: **Alexander Hergt** -

Chair: **Kapil Panchal** - Elliott

Chair: **Stefan Fritz** - German Aerospace Center

Presentations:

Investigation of the Dynamics of Secondary Flow Vortex Systems in Low-Pressure Turbines Using Direct Numerical Simulation, {GT2025-151623}

Technical Paper Publication

Victor Baconnet - FLOW, Department of Engineering Mechanics, KTH Royal Institute of Technology
Martin Karp - FLOW, Department of Engineering Mechanics, KTH Royal Institute of Technology
Ardeshir Hanifi - FLOW, Department of Engineering Mechanics, KTH Royal Institute of Technology
Davide Lengani - UNIGE University of Genoa
Daniele Simoni - UNIGE University of Genoa
Dan S. Henningson - FLOW, Department of Engineering Mechanics, KTH Royal Institute of Technology

Large-Eddy Simulations of a 3 Stages High-Speed Low-Pressure Turbine Cascade, {GT2025-152194}

Technical Paper Publication

Florent Duchaine - CERFACS
Jérôme Dombard - Safran Aircraft Engines

Hybrid Large-Eddy Simulation of Tip-Leakage Flow in a 1.5-Stage High Pressure Turbine, {GT2025-153506}

Technical Paper Publication

Adwiteey Raj Shishodia - Purdue University
Tom Shih - Purdue University
Kenneth Bryden - Iowa State University
John Crane - National Energy Technology Laboratory

On the Mechanism for Rotating Cavitation Onset in a Four-Bladed Rocket Engine Turbopump Inducer, {GT2025-153419}

Technical Paper Publication

Hiromitsu Kakudo - Massachusetts Institute of Technology
James Wall - Massachusetts Institute of Technology
Zoltan Spakovszky - Massachusetts Institute of Technology

37-03 Radial Turbomachinery CFD

6/19/2025

8:00 AM to 10:00 AM - LL4

Chair: **Bob Mischo - MAN Energy Solutions**

Chair: **Thorsten Hansen - ISIMQ**

Chair: **Rodrigo Rodriguez Erdmenger - GE**

Presentations:

CFD Investigation of Unsteady Interactions in a Radial-Axial Turboexpander for Geothermal Power Plants Applications, {GT2025-153202}

Technical Paper Publication

Lorenzo Milli - Baker Hughes

Fabrizio Lottini - Baker Hughes

Michele Marconcini - University of Florence

Andrea Arnone - University of Florence

Experimental and Numerical Rotating Stall Investigation of a Multistage Centrifugal Compressor, {GT2025-153766}

Technical Paper Publication

Marco Batisti - University of Florence

Michele Marconcini - University of Florence

Andrea Agnolucci - Baker Hughes

Elisabetta Belardini - Baker Hughes

Angelo Grimaldi - Baker Hughes

Lorenzo Toni - Baker Hughes

Roberto Valente - Baker Hughes

Andrea Arnone - University of Florence

Liquid Injected Seal to Reduce Leakage Flow in a Refrigerant Compressor, {GT2025-151150}

Technical Paper Publication

Karthik Krishna - Danfoss

Jin Yan - Danfoss

28-04: Experimental techniques and applications

6/19/2025

8:00 AM to 10:00 AM - 105

Chair: **Luigi Carassale -**

Chair: **Vsevolod Kharyton - Siemens**

Chair: **Laurent Blanc - École Centrale de Lyon**

Presentations:

On the Determination of Nodal Diameter Spectrum and Mistuning Quantification of Synchronous Blade Vibrations Through Blade-Tip-Timing Measurements, {GT2025-151774}

Technical Paper Publication

Marios Sasakaras - RWTH Aachen, Institute of Power Plant Technology, Steam and Gas Turbines

Jonte Becker - RWTH Aachen, Institute of Power Plant Technology, Steam and Gas Turbines

Manfred Wirsum - RWTH Aachen, Institute of Power Plant Technology, Steam and Gas Turbines

Bernd Beirow - BTU Cottbus, Chair of Structural Mechanics and Vehicle Vibrational Technology

A Unified Approach for the Quantitative Comparison of Strain Gauge and Blade Tip-Timing Measurement Results for Blade Vibration in Turbomachinery, {GT2025-151780}

Technical Paper Publication

Markus Schafferus - Institute of Power Plant Technology, Steam and Gas Turbines

Marios Sasakaras - Institute of Power Plant Technology, Steam and Gas Turbines

Manfred Wirsum - Institute of Power Plant Technology, Steam and Gas Turbines

Analysis of Blade Tip Timing Data From Nonuniformly-Spaced Sensors by Discrete Wavelet Transform, {GT2025-154016}

Technical Paper Publication

Roberto Guida - Ansaldo Energia

Michela Marrè-Brunenghi - Ansaldo Energia

Luigi Carassale - University of Genova

Validation Tests for a Gas Turbine Thin-Shell Duct, {GT2025-151712}

Technical Paper Publication

Paolo Di Sisto - Baker Hughes

Maria Cristina Mancino - Baker Hughes

Giulia Fioletti - Baker Hughes

05-06: Pressure Probes Measurements

6/19/2025

8:00 AM to 10:00 AM - LL10

Chair: **Tamy Guimaraes - Penn State University**

Chair: **Lubomir Ribarov - U.S. Merchant Marine Academy**

Chair: **Lorenzo Ferrari - University of Pisa**

Presentations:

Uncertainty Quantification for Multi-Hole Pneumatic Probe Measurements in Transonic Turbomachinery Flows, {GT2025-151475}

Technical Paper Publication

Johannes Bachner - German Aerospace Center (DLR)

Andreas Pahs - German Aerospace Center (DLR)

Philipp Weggler - German Aerospace Center (DLR)

Florian Herbst - German Aerospace Center (DLR)

Measurement Errors Downstream of a Rotor due to Probe-Blade Row Interaction, {GT2025-151772}

Technical Paper Publication

Laura-Cristina Ciuches - Whittle Laboratory, University of Cambridge

Christopher J. Clark - Whittle Laboratory, University of Cambridge

Samuel D. Grimshaw - Whittle Laboratory, University of Cambridge

Ryosuke Seki - Fluid Dynamics Research Department, Research & Innovation Center, Mitsubishi Heavy Industries, Ltd.

Shigeki Senoo - Fluid Dynamics Research Department, Research & Innovation Center, Mitsubishi Heavy Industries, Ltd.

Mathematical Modeling for Normalizing Pressure Probe Measurements Using Symbolic Regression, {GT2025-153031}

Technical Paper Publication

Dahae Jeong - Pennsylvania State University

Kang-Il Lee - Pennsylvania State University

Emma Smithwick - Princeton

Tamara Guimarães - Pennsylvania State University

Robust and Accurate Transient Multi-Hole Traverses: A Physical Approach Using Laplace Transform, {GT2025-153119}

Technical Paper Publication

Samuel Eilers - University of the Bundeswehr Munich - Institute of Jet Propulsion

Dragan Kožulović - University of the Bundeswehr Munich - Institute of Jet Propulsion

Martin Bitter - University of the Bundeswehr Munich - Institute of Jet Propulsion

18-05: Failure Prediction & Life Assessment II

6/19/2025

8:00 AM to 10:00 AM - LL9

Chair: **Scott Keller - Doosan Turbomachinery Services**

Chair: **Onome Scott-Emuakpor - Hyphenmade**

Chair: **Alex Bridges -**

Chair: **Md Abir Hossain - GE**

Chair: **Sandra Megahed -**

Chair: **Calvin Stewart - Ohio State University**

Presentations:

An Examination of Primary Creep in Gas Turbine Applications, {GT2025-151365}

Technical Paper Publication

William Day - Power Systems Mfg LLC

Firat Irmak - Florida Institute of Technology

Ali P. Gordon - University of Central Florida

Utilizing ICME Informed Inoculation to Solve Solidification Cracking and Improve Properties for Powder Bed Fusion Printed Alloy 230, {GT2025-152136}

Technical Paper Publication

Benjamin Rafferty - Elementum 3D

Daniel Mcconville - Colorado School of Mines

Stanley Baldwin - Elementum 3D

Kevin Eckes - Elementum 3D

Jeremy Iten - Elementum 3D

Jonah Klemm-Toole - Colorado School of Mines

Stress Assisted Grain Boundary Oxidation Behavior of IN706 Material Used in Gas Turbines, {GT2025-152421}

Technical Paper Publication

Alex Bridges - EPRI

Kurt Boschmans - ENGIE Laborelec

High-Temperature Mechanical Performance and Microstructural Development in Nickel-Based Alloy 617 Diffusion Bonds for High-Efficiency Heat Exchangers, {GT2025-153876}

Technical Paper Publication

Nikki Harless - Electric Power Research Institute

John Shingledecker - Electric Power Research Institute

Bonnie Antoun - Sandia National Laboratories

Dereje Amogne - Vacuum Process Engineering, Inc. (VPE)

Kevin Albrecht - Vacuum Process Engineering, Inc. (VPE)

Matthew Sandlin - Sandia National Laboratory - Concentrating Solar Technologies

06-07 Heat Pumps-III

6/19/2025

8:00 AM to 10:00 AM - 112

Chair: **Ioannis Roumeliotis - Cranfield University**

Chair: **Ward De Paepe - UMONS**

Chair: **Alessandro Sorce - Università degli Studi di Genova**

Chair: **Dario Alfani - Politecnico di Milano**

Chair: **Eduardo Anselmi Palma - CRANFIELD UNIVERSITY**

Presentations:

Thermodynamic Performance Assessment of Recuperated Brayton Cycle High-Temperature Heat Pumps for Combined Heat and Cold Production, {GT2025-153988}

Technical Paper Publication

Christophe Vankelekom - University of Mons

Panagiotis Stathopoulos - German Aerospace Center (DLR)

Frederiek Demeyer - Mechanics and Thermal processes, Engie R&I Laborelec

Ward De Paepe - University of Mons (UMONS)

Experimental Performance Analysis of a 50 kW Brayton Turbomachine Heat Pump Demonstrator, {GT2025-152419}

Technical Paper Publication

Johannes Oehler - German Aerospace Center (DLR)

Fatma Cansu Yücel - German Aerospace Center (DLR)

Panagiotis Stathopoulos - German Aerospace Center (DLR)

Feasibility Study of a Brayton-Based High Temperature Heat Pump for Waste Heat Recovery in Industrial Applications, {GT2025-153559}

Technical Paper Publication

Alberto Patti - Thermochemical Power Group (TPG), Department of Mechanical Engineering (DIME), University of Genoa

Stefano Barberis - Thermochemical Power Group (TPG), Department of Mechanical Engineering (DIME), University of Genoa

Alberto Traverso - Thermochemical Power Group (TPG), Department of Mechanical Engineering (DIME), University of Genoa

Vittorio Usai - Internal Combustion Engines Group (ICEG), Department of Mechanical Engineering (DIME), University of Genoa

Raffaele Spezia - SIT Technologies

20-02: Gas Turbine Operation and Maintenance

6/19/2025

8:00 AM to 10:00 AM - 114

Chair: **Jason Wilkes - Southwest Research Institute**

Chair: **Mauro Venturini -**

Presentations:

Optimizing Maintenance for Pipeline Gas Turbine Machinery, {GT2025-152222}

Technical Paper Publication

Hemanth Satish - TC Energy

Christopher Perullo - Turbine Logic

Corson Teasley - Turbine Logic

On-Field End-of-Life Filters Fouling Survey of Two 260 MW Gas Turbines, {GT2025-152089}

Technical Paper Publication

Alessio Suman - DE – Department of Engineering, University of Ferrara

Nicola Zanini - DE – Department of Engineering, University of Ferrara

Annalisa Fortini - DE – Department of Engineering, University of Ferrara

Andrea Bisciotti - Department of Physics and Earth Science, University of Ferrara

Mattia Piovan - DE – Department of Engineering, University of Ferrara

Giuseppe Cruciani - Department of Physics and Earth Science, University of Ferrara

Michele Pinelli - DE – Department of Engineering, University of Ferrara

Development of User Gas Turbine Performance Calculation Tool Based on the ASME PTC 22 Code, {GT2025-152205}

Technical Paper Publication

Dominique Orhon - TotalEnergies S.E.

Poemana Ropiteau - TotalEnergies S.E.

Design of Integrated Bleed System for Aeroderivative Gas Turbine, {GT2025-153661}

Technical Paper Publication

Gabriele Lucherini - Baker Hughes

Stefano Gimmi - Baker Hughes

Stefano Minotti - Baker Hughes

Rajnish Kumar Singh - Baker Hughes

04-43 Flashback and Blowoff II

6/19/2025

8:00 AM to 10:00 AM - 110

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Luis Bravo -**

Chair: **Patrizio Vena -**

Chair: **Stefano Orsino -**

Presentations:

High Fidelity Simulation for the Lean Blow-Out Analysis of an Industrial Burner Operated With Artificial EGR, {GT2025-153366}

Technical Paper Publication

Roberto Meloni - Baker Hughes

Giulia Babazzi - Baker Hughes

Simone Castellani - Department of Industrial Engineering University of Florence

Gianmarco Lemmi - Department of Industrial Engineering University of Florence

Alessio Picchi - Università degli studi di Firenze

Sofia Galeotti - Department of Industrial Engineering University of Florence

Riccardo Becchi - Università degli studi di Firenze

Antonio Andreini - Department of Industrial Engineering University of Florence

Experimental Observation of Ammonia Blending and Cracking on Lean Blow-Out Behaviors in a Model Gas Turbine Combustor, {GT2025-153359}

Technical Paper Publication

Austin T. Shealy - University of South Carolina

Frederick L. Dryer - University of South Carolina

Sang Hee Won - University of South Carolina

15-02 Numerical Studies of Internal Cooling 1

6/19/2025

10:30 AM to 12:00 PM - LL7

Chair: **Riccardo Da Soghe -**

Chair: **Wontae Hwang -**

Chair: **David Flodman - Mitsubishi Heavy Industries**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl Sangan - University of Bath**

Chair: **Gregory Laskowski - Dassault Systemes**

Presentations:

Computational and Experimental Investigation of Discrete “W” Turbulators for sCO₂ Turbine Internal Cooling, {GT2025-151493}

Technical Paper Publication

Owen Grabowski - National Energy Technology Laboratory
Matthew Searle - National Energy Technology Laboratory
Douglas Straub - National Energy Technology Laboratory

Numerical and Low-Order Modelling of Double Wall Liner Cooling With Pin-Fins, {GT2025-153570}

Technical Paper Publication

Zeki Tugberk KARASU - TUSAS Engine Industries
Fırat KIYICI - TUSAS Engine Industries
Erinc Erdem - TUSAS Engine Industries

Neural Network Modeling for Predicting Local Heat Transfer in Jet Impingement: A Comparison With Traditional Correlations, {GT2025-154276}

Technical Paper Publication

susheel singh - Saint Louis University
Prashant Singh - The University of Tennessee, Knoxville
Dylan Olson - Saint Louis University

32-09 Turbine Designs

6/19/2025

10:30 AM to 12:00 PM - LL2

Chair: **Marcel Oettinger - MTU Aero Engines**

Chair: **Emil Goettlich -**

Chair: **Lukas Benjamin Inhestern - Purdue University**

Presentations:

Optimization of 2D Slot Injection Geometry for Variable Area Turbine Fluidic Throttling, {GT2025-151872}

Technical Paper Publication

Cole D. Westrick - The Ohio State University
Corey T. Mays - The Ohio State University
Jeffrey P. Bons - The Ohio State University

Nozzle Guide Vane Design for Dual Function Throttling Using Active Flow Control, {GT2025-152746}

Technical Paper Publication

Corey Mays - The Ohio State University
Cole Westrick - The Ohio State University
Jeffrey Bons - The Ohio State University

Development of Axial Turbine Blade Profile for sCO₂ Power Block Using Streamline Curvature Method, {GT2025-153159}

Technical Paper Publication

Goutam Mandal - Indian Institute of Science, Bangalore
Senthil Kumaran - Indian Institute of Science, Bangalore
Pramod Kumar - Indian Institute of Science, Bangalore
Pramodchandra Gopi - Triveni Turbine Limited

31-10 Flow Control

6/19/2025

10:30 AM to 12:00 PM - LL1

Chair: **Lisa Brilliant - Pratt & Whitney**

Chair: **Daniel Wilkin II - GE Aerospace**

Chair: **Tianyu Pan - BEIHANG UNIVERSITY**

Chair: **Haideng Zhang - Jiaotong University**

Chair: **M. Krautheim - Rolls Royce**

Presentations:

Numerical Investigation of Passive and Active Flow Control Methods in a Low-Speed Multistage, Highly-Loaded Axial Compressor With Tandem Stator Configuration, {GT2025-152491}

Technical Paper Publication

Gladys Gutiérrez Lupinta - Technical University of Munich

Jannik Eckel - Technical University of Munich

Volker Gümmer - Technical University of Munich

Effect of a Sinusoidal Leading Edge Undulation on the Rotor Tip Gap Flow in a Highly Loaded Axial Compressor, {GT2025-154003}

Technical Paper Publication

Patrick Okfen - Institute of Jet Propulsion and Turbomachinery, RWTH Aachen University

Henrik Volgmann - Institute of Jet Propulsion and Turbomachinery, RWTH Aachen University

Stefan Henninger - Institute of Jet Propulsion and Turbomachinery, RWTH Aachen University

Peter Jeschke - Institute of Jet Propulsion and Turbomachinery, RWTH Aachen University

Sven-Jürgen Hiller - MTU Aero Engines AG

The Design of Aspirated Stators for Compressor Bleed, {GT2025-152653}

Technical Paper Publication

Jonathan Waldren - University of Cambridge

Ryosuke Seki - Research and Innovation Center, Mitsubishi Heavy Industries Ltd

Sam Grimshaw - University of Cambridge

Graham Pullan - University of Cambridge

14-06: Turbine Rim Seal and Rotor-Stator Cavity 3

6/19/2025

10:30 AM to 12:00 PM - LL6

Chair: **Arnd Reichert -**

Chair: **Hui Tang - University of Bath**

Chair: **Michael D. Barringer - Penn State**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl M. Sangan -**

Chair: **Alessio Picchi -**

Presentations:

Unsteady Effectiveness Measurements in Rim Seals Through Fast Pressure-Sensitive Paint, {GT2025-153643}

Technical Paper Publication

Alessio Picchi - University of Florence

Lorenzo Orsini - University of Florence

Bruno Facchini - University of Florence

Alessio Bonini - Baker Hughes

Alberto Amerini - Baker Hughes

The Adverse Effect of Pre-Swirl on Ingestion in a Downstream Cavity, {GT2025-154102}

Technical Paper Publication

James Harrington - University of Bath

Simon Vella - University of Bath

Hui Tang - University of Bath

Gary Lock - University of Bath

James Scobie - University of Bath

Fatoumata Bintou Santara - Safran Aircraft Engines

Clement Jarrossay - Safran Aircraft Engines
Damien Bonneau - Safran Aircraft Engines
Francesco Salvatori - Safran Aircraft Engines
Carl Sangan - University of Bath

04-29 Emissions Hydrogen/Ammonia II

6/19/2025

10:30 AM to 12:00 PM - 108

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Leonard Angello - EPRI**

Chair: **Cristian Avila -**

Presentations:

Co-Firing Hydrogen With Natural Gas for 9 MW Siemens Energy Dry Low Emissions Combustor: Part II – Large Eddy Simulations, {GT2025-152877}

Technical Paper Publication

Liam Mcmanus - Siemens Digital Industries Software

Nick Fogell - Siemens Digital Industries Software

Kexin Liu - Siemens Energy Industrial Turbomachinery Ltd

Suresh Sadasivuni - Siemens Energy Industrial Turbomachinery Ltd

Jadeed Beita - jadeed.beita@siemens-energy.com

Erik Munktell - Siemens Digital Industries Software

Reducing NOx Emissions in Ammonia Combustors, {GT2025-153268}

Technical Paper Publication

Satyendra Rana - University of Connecticut

Paul Papas - RTX Technology Research Center

Lance L. Smith - RTX Technology Research Center

Chih-Jen Sung - University of Connecticut

NOx Emission of Ammonia Combustion: Analyzing the Impact of Mixing With a Novel Monte Carlo Model, {GT2025-153679}

Technical Paper Publication

Werner Krebs - Siemens Energy

Pascal Gruhlke - Siemens Energy

Juergen Meisl - Siemens Energy

Bastian Werdemann - Siemens Energy, Germany

Andrew North - Siemens Energy, USA

04-31: Emissions II

6/19/2025

10:30 AM to 12:00 PM - 110

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Ali Cemal Benim -**

Chair: **Michael Duesing -**

Presentations:

Comprehensive Modeling of the Cause-And-Effect Chain in Aero-Engine Combustor Simulations: From Primary Breakup to Soot Formation, {GT2025-151330}

Technical Paper Publication

*Philipp Koob - Technical University of Darmstadt
Hendrik Nicolai - Technical University of Darmstadt
Andreas Lindenthal - Technical University of Darmstadt
Frederic Aaron Witkind Hirth - Karlsruhe Institute of Technology
Niklas Bürkle - Karlsruhe Institute of Technology
Thomas Soworka - German Aerospace Center
Ruud Eggels - Rolls-Royce Deutschland Ltd & CO KG
Carsten Clemen - Rolls-Royce Deutschland Ltd. & CO KG
Rainer Koch - Karlsruhe Institute of Technology
Thomas Behrendt - German Aerospace Center
Michael Schroll - German Aerospace Center
Christian Hasse - Technical University of Darmstadt*

Numerical Demonstration of NO Emissions Reduction by Steam Injection in the Aero Engine Combustor IAE V2500, {GT2025-152037}

Technical Paper Publication

*Marian Hiestermann - MTU Aero Engines AG
Matthias Haeringer - MTU Aero Engines AG
Marcel Désor - Technical University Munich
Korbinian Niebler - Technical University Munich
Lukas Berger - MTU Aero Engines AG*

Modeling of Particulate Emissions From Conventional and Sustainable Jet Fuels in Aero Engine Combustors, {GT2025-152889}

Technical Paper Publication

*Daniel Lieder - TU Braunschweig
Jan Göing - TU Braunschweig
Robert Schmitz - TU Braunschweig
Jens Friedrichs - TU Braunschweig
Federica Ferraro - TU Braunschweig*

04-35 Combustion Experiments IV

6/19/2025

10:30 AM to 12:00 PM - 109 A/B

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Ashwini Karmarkar -**

Presentations:

Flame Transition Detection Using Wavelet Transform Applied on the Dynamic Behaviour of a Swirled Staged Multipoint Spray Flame at Different Preheating Temperatures, {GT2025-153894}

Technical Paper Publication

*Marie Truffot - Laboratoire EM2C, CNRS & Safran Aircraft Engines
Antoine Renaud - Laboratoire EM2C, CNRS, Centralesupelec
Laurent Zimmer - Laboratoire EM2C, CNRS, Centralesupelec
Franck Richecoeur - Laboratoire EM2C, CNRS, Centralesupelec
Yoann Méry - Safran Aircraft Engines*

OH-PLIF Measurements for Micromixed Flames in a Multi-Injector Burner at Elevated Pressures and Temperatures, {GT2025-154116}

Technical Paper Publication

*Antoine Durocher - NRC Canada
Luming Fan - National Research Council Canada
Marc Füre - Siemens Energy Canada Limited
Julien Sirois - Siemens Energy Canada Limited*

David May - Siemens Energy Canada Limited
Gilles Bourque - McGill University
Jeffrey Berghorson - McGill University
Sean Yun - National Research Council Canada
Patrizio Vena - National Research Council Canada

The Effect of Quench Air on the Upstream Swirling Flow in a Rich-Quench-Lean Combustor With a Moderate Swirl Intensity Under Isothermal Conditions, {GT2025-154150}

Technical Paper Publication

KUNDAN KUMAR - Indian institute of Science Bengaluru
Nishant Jain - Pratt & Whitney
Irfan A. Mulla - Indian Institute of Science Bengaluru

23-09 Dry Gas Seals

6/19/2025

10:30 AM to 12:00 PM - 107 A/B

Chair: **Min Zhang - Linde**

Chair: **Jurg Schiffmann -**

Presentations:

Numerical Investigations on the Leakage Flow and Rotordynamic Performance of the Labyrinth Seal at Different Inlet Gas Volume Fractions, {GT2025-152802}

Technical Paper Publication

Jie Qu - Xi'an Jiaotong University
Wensong Xue - Xi'an Jiaotong University
Qinghua Deng - Xi'an Jiaotong University
Zhigang Li - Xi'an Jiaotong University
Jun Li - Xi'an Jiaotong University

A Framework for Computational Dynamic Characterisation of Dry Gas Seals for Assessing System Response, {GT2025-153967}

Technical Paper Publication

Dimitrios Vitlaris - Cranfield University
Jerry Thomas John - Cranfield University
Mani Santhanakrishnan - Cranfield University
David John Rajendran - Cranfield University
Ioannis Roumeliotis - Cranfield University
David Pickens - John Crane
Jasper Oranje - John Crane

Investigating Swirl Brake Designs for Improving Rotordynamic Stability in Oil-Free Centrifugal Compressors Using Refrigerants, {GT2025-153996}

Technical Paper Publication

Wenjie Yin - Copeland Corporation
Urmish Haribhakti - Copeland Corporation
Ammasai Palani - Copeland Corporation
Robert Wang - Copeland Corporation

02-02 Environmental Durability of Protective Coatings

6/19/2025

10:30 AM to 12:00 PM - LL8

Chair: **Spencer Jeffs - Swansea**

Chair: **Michael Presby -**

Presentations:

Corrosion of Rare-Earth Disilicate Environmental Barrier Coatings in Gas Turbine Environments—Part 2: Microstructure Model, {GT2025-154033}

Technical Paper Publication

Chong M. Cha - Rolls-Royce Corporation

Mackenzie J. Ridley - Oak Ridge National Laboratory

Oxidation of an Environmental Barrier Coated Ceramic Matrix Composite in a Combustion Environment, {GT2025-152711}

Technical Paper Publication

Michael Presby - NASA Glenn Research Center

Roy Sullivan - NASA Glenn Research Center

Leland Hoffman - HX-5, LLC

Bryan Harder - NASA Glenn Research Center

Kang Lee - NASA Glenn Research Center

Foreign Object Damage of an Environmental Barrier Coated Ceramic Matrix Composite, {GT2025-152547}

Technical Paper Publication

Leland C. Hoffman - HX5 (NASA Glenn Research Center)

Bryan J. Harder - NASA Glenn Research Center

Michael J. Presby - NASA Glenn Research Center

37-04 Radial Turbomachinery Optimization

6/19/2025

10:30 AM to 12:00 PM - LL4

Chair: **Bob Mischo - MAN Energy Solutions**

Chair: **Robert Pelton - Elliott-Turbo**

Chair: **Kapil Panchal - Elliott**

Presentations:

Optimization Methodology for Automotive Fuel Cell Centrifugal Compressors, {GT2025-151386}

Technical Paper Publication

Janik Rajh - RWTH Aachen University, Institute of Jet Propulsion and Turbomachinery

Julian Toussaint - RWTH Aachen University, Chair of Thermodynamics of Mobile Energy Conversion Systems

Johannes Klütsch - FEV Europe GmbH

Simon Loerwald - RWTH Aachen University, Institute of Jet Propulsion and Turbomachinery

Philipp Schwarz - RWTH Aachen University, Institute of Jet Propulsion and Turbomachinery

Stefan Henninger - Institute of Jet Propulsion and Turbomachinery, RWTH Aachen University

Peter Jeschke - RWTH Aachen University, Institute of Jet Propulsion and Turbomachinery

Towards the Automatic Generation of Transonic Centrifugal Impellers by Deep Learning and Feature Importance Techniques, {GT2025-153947}

Technical Paper Publication

Alessandro Pela - University of Florence

Michele Marconcini - University of Florence

Andrea Agnolucci - Baker Hughes

Elisabetta Belardini - Baker Hughes

Angelo Grimaldi - Baker Hughes

Lorenzo Toni - Baker Hughes

Roberto Valente - Baker Hughes

Andrea Arnone - University of Florence

28-02: Dynamic response of engine components

6/19/2025

10:30 AM to 12:00 PM - 106

Chair: **Luigi Carassale** -

Chair: **Bernd Beirow** - **Brandenburg University of Technology**

Chair: **Michela Marrè Brunenghi** - **Ansaldo Energia**

Presentations:

New Modal Tracking Methods for Cyclic Structures – Application to Centrifugal Compressor Impellers, {GT2025-151263}

Technical Paper Publication

Giulio Deiana - Università degli Studi di Firenze

Giulio Costa - Baker Hughes

Alberto Guglielmo - Baker Hughes

Enrico Meli - Università degli Studi di Firenze

Forced Response of an Unstable LPT Bladed-Disk: New States With Different Blade Vibration Amplitude, {GT2025-152970}

Technical Paper Publication

Carlos Martel - Universidad Politécnica de Madrid

Salvador Rodríguez - Universidad Politécnica de Madrid

Javier González - Universidad Politécnica de Madrid

Process Flow for Integrally Bladed Rotor Mistuning Identification During Depot Inspections Using Geometric Mistuning Approaches, {GT2025-153895}

Technical Paper Publication

Joseph A. Beck - Perceptive Engineering Analytics, LLC

Jeffrey M. Brown - Air Force Research Laboratory

Alex A. Kaszynski - Advanced Engineering Solutions

Daniel L. Gillaugh - Air Force Research Laboratory

18-06: Metallurgy, Coating, & Repair

6/19/2025

10:30 AM to 12:00 PM - LL9

Chair: **Scott Keller** - **Doosan Turbomachinery Services**

Chair: **Paul Lowden** -

Chair: **Minh Quan Pham** -

Chair: **Alex Bridges** -

Presentations:

Environmental Resistance of High Entropy Alloys: Impact of Downstream Hydrogen Combustion on Oxidation Resistance, {GT2025-152135}

Technical Paper Publication

Anne Bastin - Carleton University

Taylor Robertson - National Research Council Canada

Antoine Durocher - National Research Council Canada

Patrizio Vena - National Research Council Canada

Richard Kearsey - National Research Council Canada

Xiao Huang - Carleton University

Development of a Low-Density Superalloy Optimized for Components in Large Gas Turbines, {GT2025-153405}

Technical Paper Publication

*Timo Depka - Siemens Energy Global GmbH & Co. KG
Birgit Grüter - Siemens Energy Global GmbH & Co. KG
Oliver Lüsebrink - Siemens Energy Global GmbH & Co. KG
Christian Kontermann - Trier University of Applied Sciences
Yan Wang - Technical University of Darmstadt
Matthias Oechsner - Technical University of Darmstadt*

Tribology of Surface Films on High Temperature Alloys for Metal Seals, {GT2025-154126}

Technical Paper Publication

*Elaine Motyka - Technetics Group
Erin Volpe - Technetics Group
Stefan Roeseler - Technetics Group
Ryan Plessinger - Technetics Group
Tyler Noyes - Technetics Group
Becca Jones - Technetics Group
Shannon Depratter - Technetics Group
Jonathan Kweder - Technetics Group*

06-09 Hybrid Electric Propulsion

6/19/2025

10:30 AM to 12:00 PM - 112

Chair: **Ioannis Roumeliotis - Cranfield University**

Chair: **Ward De Paepe - UMONS**

Chair: **Alessandro Sorce - Università degli Studi di Genova**

Chair: **Christina Salpingidou - Accelleron industries**

Chair: **Jinning Zhang - Leicester University**

Presentations:

Methodology for Exploring SOFC System Layouts in a Highly Integrated Hybrid Propulsion System, {GT2025-151884}

Technical Paper Publication

*Luca Mantelli - University of Genoa
Abhishek Dubey - University of Genoa
Dario Buzzola - University of Genoa
Mario Luigi Ferrari - University of Genoa
Evangelia Pontika - Cranfield University
Stefan Kazula - German Aerospace Center (DLR)
Daniel Ewald - Karlsruhe Institute of Technology (KIT)
Andre Weber - Karlsruhe Institute of Technology (KIT)
Stefanie De Graaf - German Aerospace Center (DLR)*

Strut-Based Porous Media Heatsinks for High-Performance Power Electronics Thermal Management in Electrified Aircrafts, {GT2025-152670}

Technical Paper Publication

*Dikshant Sharma - Chair of Aeroengine Design, Brandenburg University of Technology Cottbus-Senftenberg
Lukas Radomsky - Institute for Electrical Machines, Traction and Drives, Technische Universität Braunschweig
Akilan Mathiazhagan - Chair of Aeroengine Design, Brandenburg University of Technology Cottbus-Senftenberg
Ghaieth Hammami - Institute for Electrical Machines, Traction and Drives, Technische Universität Braunschweig
Karunakar Reddy Konda - Chair of Aeroengine Design, Brandenburg University of Technology Cottbus-Senftenberg
Majid Asli - Chair of Aeroengine Design, Brandenburg University of Technology Cottbus-Senftenberg
Klaus Höschler - Chair of Aeroengine Design, Brandenburg University of Technology Cottbus-Senftenberg
Regine Mallwitz - Institute for Electrical Machines, Traction and Drives, Technische Universität Braunschweig*

Preliminary Design of Integrated Power and Thermal Management Systems for Hybrid Electric VTOL Aircraft Architecture, {GT2025-153756}

Technical Paper Publication

Sangkeun Kang - Cranfield University

Chana Anna Saias - Cranfield University

Ioannis Roumeliotis - Cranfield University

Olivier Broca - Siemens Industry Software

30-05 Heat Exchangers

6/19/2025

10:30 AM to 12:00 PM - LL5

Chair: **Timothy Allison - Southwest Research Institute**

Chair: **Renaud Le Pierres - Parker**

Chair: **Nathan See - ORNL**

Presentations:

Computational Modeling of a 3D Printed Recuperator and Subsequent Experimental Loop for Supercritical Carbon Dioxide Cycles, {GT2025-151496}

Technical Paper Publication

Nathan See - Oak Ridge National Laboratory

Kevin Robb - Oak Ridge National Laboratory

Nolan Goth - Oak Ridge National Laboratory

Vivek Rao - Oak Ridge National Laboratory

Vineet Kumar - Oak Ridge National Laboratory

Diego Morales - Purdue University

Two-Phase Microchannel Heat Exchangers for Transcritical CO₂ Cycles - Investigation of Heat Transfer and Pressure Drop, {GT2025-153958}

Technical Paper Publication

Vyas Duggirala - Indian Institute of Science, Bengaluru

Venkatanarasimha Hegde - Indian Institute of Science

Pramod Kumar - Indian Institute of Science, Bengaluru

Venkateswara Reddy - Boeing Research & Technology, India

Techno-Economic Analysis of Gen3 Concentrated Solar Power With a Topology-Optimized Silicon Carbide Heat Exchanger, {GT2025-152472}

Technical Paper Publication

Kaleb Troyer - University of Wisconsin-Madison

Michael Wagner - University of Wisconsin-Madison

01-14 Propellers and Open Rotors II

6/19/2025

10:30 AM to 12:00 PM - 111

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**

Chair: **Curtis Vedder - Honeywell**

Chair: **Maximilian Mennicken - German Aerospace Center (DLR)**

Chair: **Kenneth Van Treuren - Baylor University**

Presentations:

Propeller Design Methods: An Overview, From Classic Theories to Modern Propeller Design Techniques, {GT2025-151905}

Technical Paper Publication

Marcelo Marques Gomes Dias - Aeronautics Institute of Technology
Jesuino Takachi Tomita - Aeronautics Institute of Technology
Cleverson Bringham - Aeronautics Institute of Technology
Franco Jefferds Dos Santos Silva - Aeronautics Institute of Technology

Improving Propeller Performance Using a Hybrid Airfoil Propeller Design, {GT2025-153475}

Technical Paper Publication

Kenneth Van Treuren - Baylor University
Charles Wisniewski - USAF Academy
Devin O'dowd - USAF Academy

Preliminary Design and Performance Analysis of Aircraft Propellers Using a 0-D Model, {GT2025-153993}

Technical Paper Publication

Michail K. Psaropoulos - Aristotle University of Thessaloniki
Vasilis G. Gkoutzamanis - Aristotle University of Thessaloniki
Anestis I. Kalfas - Aristotle University of Thessaloniki
Panagiotis Giannakakis - SAFRAN SA

31-11 Boundary Layer Dynamics

6/19/2025

1:30 PM to 3:30 PM - LL1

Chair: **Lisa Brilliant - Pratt & Whitney**

Chair: **Daniel Wilkin II - GE Aerospace**

Chair: **Amit Paspulati -**

Chair: **Hien Phan -**

Chair: **Andrew Cusator - Honeywell**

Presentations:

Transonic Blade Design: Quo Vadis?, {GT2025-153712}

Technical Paper Publication

Alexander Hergt - German Aerospace Center (DLR)
Edwin Joseph Munoz Lopez - German Aerospace Center (DLR)
Joachim Klinner - German Aerospace Center (DLR)
Anisha Singhatwadia - German Aerospace Center (DLR)
Sebastian Grund - German Aerospace Center (DLR)

Unsteady Boundary Layer Behavior Due to Wake Passing Effects on Low-Speed Linear Cascade Compressor Airfoils With Single and Tandem Configurations: Part 1 - Midspan Flow, {GT2025-152886}

Technical Paper Publication

Lukas Reisinger - Technical University of Munich
Philippe Bieli - Technical University of Munich
Volker Gümmer - Technical University of Munich

Unsteady Boundary Layer Behavior due to Wake Passing Effects on Low-Speed Linear Cascade Compressor Airfoils With Single and Tandem Configurations: Part 2 - Endwall Flow, {GT2025-152894}

Technical Paper Publication

Lukas Reisinger - Technical University of Munich
Philippe Bieli - Technical University of Munich
Volker Gümmer - Technical University of Munich

Non-Equilibrium Boundary Layers on Fan Blades, {GT2025-153164}

Technical Paper Publication

Oliver Jagger - Whittle Laboratory
Yuri Frey Marioni - Rolls-Royce Plc

Marcus Meyer - Rolls-Royce Deutschland Ltd
Andrew Wheeler - Whittle Laboratory

12-09: Film Cooling Optimization and Novel Design

6/19/2025

1:30 PM to 3:30 PM - LL6

Chair: **Richard Anthony - AFRL**

Chair: **Ardeshir Riahi -**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl Sangan - University of Bath**

Chair: **Lamyaa El-Gabry -**

Chair: **Charles Haldeman - Pratt & Whitney**

Presentations:

Optimization of Effusion Cooling Pitch With Non-Zero Compound Angle, {GT2025-151362}
Technical Paper Publication

Boyuan Song - Aerospace Research Center, National Research Council of Canada

Juchan Son - University of Ottawa

Yeongmin Pyo - University of Ottawa

Zekai Hong - Aerospace Research Center, National Research Council of Canada

Investigation Into the Optimal Gas Turbine Film Cooling Configuration With the Use of a Thermal Barrier Coating, {GT2025-153412}
Technical Paper Publication

Ameya Kulkarni - The University of Texas at Austin

Joshua Lewis - University of Texas at Austin

Emma Bond - University of Texas at Austin

David Bogard - University of Texas at Austin

Adjoint Optimization of Gas Turbine Film Cooling Geometry With Elevated Mainstream Mach Number, {GT2025-154287}
Technical Paper Publication

Michael Furgeson - The University of Texas at Austin

Elise Flachs - The University of Texas at Austin

David Bogard - The University of Texas at Austin

Thermal Performance Comparisons of Advanced Cooling Designs Under Engine Representative Conditions, {GT2025-154164}
Technical Paper Publication

Nicholas L. Gailey - Pennsylvania State University

Emily E. Hartman - The Pennsylvania State University

Michael D. Barringer - The Pennsylvania State University

Reid A. Berdanier - The Pennsylvania State University

Karen A. Thole - The Pennsylvania State University

Allan Arisi - Pratt & Whitney

Atul Kohli - Pratt & Whitney

34-07 Turbomachinery Design

6/19/2025

1:30 PM to 3:30 PM - LL4

Chair: **Jeff Defoe -**

Chair: **Craig McKeever** -

Chair: **Shakeel Nasir** -

Presentations:

Cooling Performance Prediction of Turbine Blades and Vanes for Conceptual Design, {GT2025-151335}

Technical Paper Publication

Patrick Bachmann - Technical University of Munich - Institute of Turbomachinery and Flight Propulsion

Marianne Reijerkerk - MTU Aero Engines AG München

Nelli Steinkamp - MTU Aero Engines AG München

Volker Gümmer - Technical University of Munich - Institute of Turbomachinery and Flight Propulsion

Supersonic Turbines Convergent-Divergent Vaned Nozzles Losses and Deviation Models, {GT2025-153317}

Technical Paper Publication

Leonid Moroz - SoftInWay, Inc.

Maksym Burlaka - SoftInWay, Inc.

Boris Frolov - SoftInWay Switzerland GmbH

Tetiana Dyzenko - SoftInWay Switzerland GmbH

Fan Optimization Under Distorted Boundary Layer Ingesting Flow, {GT2025-152254}

Technical Paper Publication

Akiva Wernick - The Ohio State University

Jen-Ping Chen - The Ohio State University

James Giuliani - The Ohio State University

Aerodynamic Analysis of an Open Virtual Test Case for Open Fans, {GT2025-153140}

Technical Paper Publication

Michele Greco - Universidad Politécnica de Madrid

Roque Corral - Universidad Politécnica de Madrid

Fanzhou Zhao - Imperial College London

Rainer Schnell - Institute of Propulsion Technology, German Aerospace Center (DLR)

Carola Rovira Sala - Institute of Propulsion Technology, German Aerospace Center (DLR)

Raul Martinez Luque - Safran Aircraft Engines

Fernando Gea Aguilera - Safran Aircraft Engines

04-12 Combustion Modeling V

6/19/2025

1:30 PM to 3:30 PM - 108

Chair: **Samir Rida** -

Chair: **David Noble** - **EPRI**

Chair: **Lee Shunn** - **Cadence**

Chair: **Homayoon Feiz** - **GE Vernova**

Presentations:

High-Fidelity Numerical Analyses for Hydrogen Jet-Flames in Crossflow, {GT2025-154178}

Technical Paper Publication

Shuzhi Zhang - University of Michigan

Vansh Sharma - University of Michigan

Venkat Raman - University of Michigan

On the Use of Low-Dimensional Simulations for Database Generation in PCA-Based Modeling, {GT2025-154197}

Technical Paper Publication

Ashish S. Newale - Ansys, Inc

Pushan Sharma - Stanford University

Perrine Pepiot - Cornell University

A Generalized and Optimized Finite Rate Chemistry Solution on Native GPU Solver, {GT2025-153901}

Technical Paper Publication

*Giuliana Litrico - Ansys Inc.
Karthik V. Puduppakkam - Ansys Inc
Ashish Newale - Ansys Inc
Reza Farokhi - Ansys Inc
Ishan Verma - Ansys Software Private Limited
Didier Bessette - Ansys France
Stefano Orsino - Ansys Inc
Rakesh Yadav - Ansys Inc*

Simulations of a Swirl Stabilised Non-Premixed Hydrogen Flame With a Flamelet Generated Manifold Approach, {GT2025-152389}

Technical Paper Publication

*Ashley van Bruygom - National Centre for Combustion and Aerothermal Technology
Andrew Garmory - National Centre for Combustion and Aerothermal Technology
A Duncan Walker - National Centre for Combustion and Aerothermal Technology*

04-16 Combustor Design IV

6/19/2025

1:30 PM to 3:30 PM - 110

Chair: **Samir Rida -**

Chair: **David Noble - EPRI**

Chair: **Wajid Chishty -**

Chair: **Antonio Ficarella - University of Salento**

Chair: **Elizabeth Paasche - GE Vernova**

Presentations:

Combustion Characterization of an Industrial Gas Turbine Combustor for Low Emissions Applications Fed With Natural Gas/Hydrogen Blends, {GT2025-153868}

Technical Paper Publication

*Salvatore Carusotto - Politecnico di Torino
Niccolò Capalbo - Politecnico di Torino
Simone Salvadori - Politecnico di Torino
Alberto Cavalli - Ethos Energy Italia S.p.A.
Francesco Cardile - Ethos Energy Italia S.p.A.
Daniela Anna Misul - Politecnico di Torino*

Optimization of Combustor Based on Machine Learning Adaptive Dimensionality Reduction Method, {GT2025-154311}

Technical Paper Publication

*Ao Sun - Zhejiang University
Kai Zhou - Zhejiang University
Jianping Yan - Zhejiang University*

Design and Numerical Investigation of a Swirl-Stabilized Hydrogen Burner for Aero Engine Applications, {GT2025-153758}

Technical Paper Publication

*Andrea Ballotti - DIEF Department of Industrial Engineering, University of Florence
Giada Senatori - DIEF Department of Industrial Engineering, University of Florence
Sofia Galeotti - DIEF Department of Industrial Engineering, University of Florence
Antonio Andreini - DIEF Department of Industrial Engineering, University of Florence*

24-02 Additive Manufacturing Applications in Engines

6/19/2025
1:30 PM to 3:30 PM - 105

Chair: **Dipankar Dua** -
Chair: **Partha Das** - **Honeywell Aerospace Inc**
Chair: **Davendu Kulkarni** - **Rolls- Royce PLC**
Presentations:

Redesign of a Gas Turbine Nozzle for Additive Manufacturing, {GT2025-151411}
Technical Paper Publication

Andrea Fardelli - Baker Hughes
Pancrazio Abate - Baker Hughes
Luciano Coniglio - Baker Hughes
Filippo Ceccanti - Baker Hughes
Daniele Benericetti - Baker Hughes
Simone Colantoni - Baker Hughes

Leveraging Additive Manufacturing Design Strategies to Understand Vaned Diffuser Off-Design Performance, {GT2025-151261}

Technical Paper Publication

Matthew Meier - Purdue University
Nicole Key - Purdue University

Evaluation of Carbon Fiber Reinforced PEEK for Utilization with a Centrifugal Compressor, {GT2025-154010}

Technical Paper Publication

Justin Warner - AFRL
Tommy George - AFRL
Dino Celli - AFRL
Trevor Tomlin - AFRL
Rachel Tullis - National Research Council
Bryan Langley - AFRL

Analysis of Additively Manufactured Cellular Structures As Heat Exchangers for Lightweight Designs in Electrified Propulsion Systems, {GT2025-152868}

Technical Paper Publication

Akilan Mathiazhagan - Brandenburgische Technische Universität Cottbus-Senftenberg
George Luiz Rincaweski Vegini - Brandenburgische Technische Universität Cottbus-Senftenberg
Klaus Hoeschler - Brandenburgische Technische Universität Cottbus-Senftenberg
Marco Montemurro - Université de Bordeaux, Arts et Métiers Institute of Technology CNRS, INRA
Majid Asli - Brandenburgische Technische Universität Cottbus-Senftenberg
Karunakar Reddy Konda - Brandenburgische Technische Universität Cottbus-Senftenberg

23-11 Seal Rotordynamics

6/19/2025
1:30 PM to 3:30 PM - 107 A/B

Chair: **Anand Srinivasan** -
Chair: **Jurg Schiffmann** -
Chair: **Giuseppe Vannini** -
Presentations:

Validation of Effectiveness of Swirl Brakes and Fluid Destabilization Force Prediction Method by Excitation Test During Load Operation of Large Steam Turbine, {GT2025-151626}

Technical Paper Publication

Makoto Iwasaki - Mitsubishi Heavy Industries
Kenichi Murata - Mitsubishi Heavy Industries

Naoto Omura - Mitsubishi Heavy Industries
Teruaki Yamawaki - Mitsubishi Heavy Industries

Development of Hydrodynamic Mechanical Face Seal for Aircraft Engine Gearboxes With Gas-Liquid Hybrid Lubrication, {GT2025-151742}

Technical Paper Publication

Yuichiro Tokunaga - Eagle Industry Co., Ltd.
Wataru Kimura - Eagle Industry Co., Ltd.
Hidetoshi Kasahara - Eagle Industry. Co., Ltd.

Static and Rotordynamic Characteristics for a Novel Helical Damper Seal Operating in a Liquid Hydrogen Turbopump, {GT2025-152582}

Technical Paper Publication

Xiaoqiang Ye - National Key Laboratory of Aerospace Liquid Propulsion
Haiyan Luo - Xi'an Jiaotong University
Wei Shen - Nuclear and Radiation Safety Center
Zhigang Li - Xi'an Jiaotong University
Jun Li - Xi'an Jiaotong University

An Experimental Investigation of the Effects of Air Ingestion on Subsynchronous Damping Coefficients in an Open Ends SFD, {GT2025-154180}

Technical Paper Publication

Nicolas Grigat - Texas A&M University
Edoardo Gheller - Politecnico di Milano
Adolfo Delgado - Texas A&M University
Paolo Pennacchi - Politecnico di Milano

02-03 Mechanical Behavior of Ceramic Matrix Composites and Protective Coatings

6/19/2025

1:30 PM to 3:30 PM - LL8

Chair: **Michael Presby -**

Chair: **Spencer Jeffs - Swansea**

Presentations:

Investigating Synergistic Effect of Double-Sided Solid Particle Erosion on Oxide/Oxide Ceramic Matrix Composites at Elevated Temperature, {GT2025-151279}

Technical Paper Publication

Farhan Mirza - The University of Akron
Jonathan Clawson - The University of Akron
Ragav Panakarajupally - The University Of Akron
Gregory Morscher - The University of Akron
Harsh Baid - Alphastar Corporation
Sung Choi - Naval Air Warfare Center-Aircraft Division (NAWCAD)

High Temperature Creep and Elastic Properties of Environmental Barrier Coatings, {GT2025-153375}

Technical Paper Publication

Julia Wood - The University of Akron
Gregory Morscher - The University of Akron
Ragav Panakarajupally - The University of Akron
Jun Shi - Rolls Royce Corporation
Weizhou Li - Rolls Royce Corporation

Elevated Temperature Fracture Properties of Yb₂Si₂O₇-Based Environmental Barrier Coatings, {GT2025-154264}

Technical Paper Publication

Jonathan Salem - NASA GRC

Michael Presby - NASA GRC
Jamesa Stokes - NASA GRC
Leland Hoffman - HX5
Craig Smith - NASA GRC
Rebekah Webster - NASA GRC

40-07: Turbine Secondary Flows and Interactions II

6/19/2025

1:30 PM to 3:30 PM - LL3

Chair: **Alexander Hergt** -

Chair: **Anna Petersen** - DLR

Chair: **Connor Wiese** -

Presentations:

Origin, Evolution, Decay and Break-Down of Rotating Instabilities in Low-Flow Turbine Operation – Part A: Time-Averaged Results, {GT2025-152402}

Technical Paper Publication

Marcel Oettinger - Institute of Turbomachinery and Fluid Dynamics - Leibniz University Hannover

Hye Rim Kim - Institute of Turbomachinery and Fluid Dynamics - Leibniz University Hannover

Joerg R. Seume - Institute of Turbomachinery and Fluid Dynamics - Leibniz University Hannover

Origin, Evolution, Decay and Break-Down of Rotating Instabilities in Low-Flow Turbine Operation – Part B: Unsteady Results, {GT2025-152403}

Technical Paper Publication

Hye Rim Kim - Institute of Turbomachinery and Fluid Dynamics / Leibniz University Hannover

Marcel Oettinger - Institute of Turbomachinery and Fluid Dynamics / Leibniz University Hannover

Joerg R. Seume - Institute of Turbomachinery and Fluid Dynamics / Leibniz University Hannover

Aeromechanical Assessment of an Optical Probe Installed in a Two-Stage High-Pressure Gas Turbine, {GT2025-153843}

Technical Paper Publication

Giacomo Innocenti - Baker Hughes

Lorenzo Miris - Baker Hughes

Lorenzo Pinelli - University of Florence

Giuseppe Del Vescovo - Baker Hughes

Enrico Beghini - Baker Hughes

Girolamo Tripoli - Baker Hughes

Alberto Scotti Del Greco - Baker Hughes

Michele Marconcini - University of Florence

Experimental Characterization of Heat Transfer and Fluid Dynamics in Pulsating Exhaust Flows, {GT2025-151614}

Technical Paper Publication

Matei C. Ignuta-Ciuncanu - Imperial College London

Jordan Michael - Imperial College London

Shuyang Qian - Imperial College

Chris Noon - Imperial College

Ricardo F. Martinez-Botas - Imperial College London

41-05 Artificial Intelligence Applied to Wind Energy

6/19/2025

1:30 PM to 3:30 PM - LL10

Chair: **Giacomo Persico - Politecnico di Milano**
Chair: **Lorenzo Ferrari - University of Pisa**
Chair: **Lorenzo Tieghi - Università degli Studi di Trento**
Chair: **Stavros Vouros - Malardalen University**
Presentations:

Multivariate Time-Series Modelling for Wind Turbine Subsystem Reliability Prediction, {GT2025-152034}
Technical Paper Publication
Fuhao Chen - University of Colorado Denver
Linyue Gao - University of Colorado Denver

Towards Interpretable Autoencoders for Anomaly Detection: An Application of Gradient-Based XAI Methods, {GT2025-154084}
Technical Paper Publication
Jaron Tulleners - KU Leuven
Dandan Peng - KU Leuven
Ludovico Terzi - ENGIE Italia
Wim Desmet - KU Leuven
Konstantinos Gryllias - KU Leuven

Fleet Based Monitoring With Multi-Feature Hierarchical Clustering, {GT2025-154122}
Technical Paper Publication
Achilleas Achilleos - KU Leuven
Dandan Peng - KU Leuven
Ludovico Terzi - ENGIE Italia
Wim Desmet - KU Leuven
Konstantinos Gryllias - KU Leuven

In-Situ Wind Turbine Blade Inspection Using Ultrasonic Non-Destructive Testing, {GT2025-153340}
Technical Paper Publication
Chris Cieslak - BladeBUG Ltd
Stacey Rivers - BladeBUG Ltd
Peter Childs - Imperial College London

25-02 Component Assessment

6/19/2025

1:30 PM to 3:30 PM - 106

Chair: **Karl Michael Kraemer -**
Chair: **Andrew Moffat - Solar Turbines**
Chair: **Navindra Wijeyeratne - Florida Polytechnic University**
Chair: **Onome Scott-Emuakpor - Hyphenmade**
Presentations:

Cyclic Life Assessment of the Gas Turbine Rotor With Variable Fast Start Using Operational Data, {GT2025-153402}
Technical Paper Publication
Zhiqiang (David) Meng - Siemens Energy
Richard Bluck - Siemens Energy

Structural Damage and Performance Degradation of the Elastic Ring Squeeze Film Damper in Rotor System, {GT2025-153470}
Technical Paper Publication
Zhuoluo Han - Beihang University, School of Energy and Power Engineering
Yongfeng Wang - Beihang University, School of Energy and Power Engineering
Yanhong Ma - Beihang University, School of Energy and Power Engineering
Jie Hong - Beihang University, School of Energy and Power Engineering

A Novel Methodology to Test Metallic Sealing Rings for Variable Guide Vanes, {GT2025-153813}

Technical Paper Publication

Stella Grazia Tomasello - Baker Hughes

Federico Bucciarelli - Baker Hughes

Enrico Giusti - Baker Hughes

Damaso Checcacci - Baker Hughes

Iterative and Dynamic Analysis of 3d Crack Growth in Turboshift Engines: A Focus on Blower Stiffness and Vibration, {GT2025-153242}

Technical Paper Publication

Sevket Ertekin - TUSAS ENGINE INDUSTRIES

Emre Baldan - TUSAS ENGINE INDUSTRIES

Tumay Inal - TUSAS ENGINE INDUSTRIES

06-10 Hydrogen for Aviation & Industry

6/19/2025

1:30 PM to 3:30 PM - 112

Chair: **Ioannis Roumeliotis - Cranfield University**

Chair: **Alessandro Sorce - Università degli Studi di Genova**

Chair: **Ward De Paepe - UMONS**

Chair: **Christos Mourouzidis - Cranfield University**

Chair: **Thierry Sibilli - Airbus**

Presentations:

The Hydrogen-Fueled Allam Cycle: Thermodynamic Evaluation and Optimization After a Fuel Switch to Hydrogen, {GT2025-152903}

Technical Paper Publication

David Bocandé - Helmut Schmidt University of Hamburg

Julia Rohardt - Technische Universität Hamburg

Markus Schatz - Helmut Schmidt University of Hamburg

On the Unsteady Behaviour of a Liquid Hydrogen Fuel System Pump for Aircraft Engine Applications, {GT2025-153718}

Technical Paper Publication

Dimitrios Lamprakis - Cranfield University

David John Rajendran - Cranfield University

Martin Yates - Rolls-Royce plc.

Ioannis Roumeliotis - Cranfield University

Vassilios Pachidis - Cranfield University

Integrated Design and Operation Assessment of a Preheating System for Liquid Hydrogen Fuelled Engines, {GT2025-154015}

Technical Paper Publication

Pavlos Rompokos - Cranfield University

Sangkeun Kang - Cranfield University

Ioannis Roumeliotis - Cranfield University

30-08 Waste Heat Recovery

6/19/2025

1:30 PM to 3:30 PM - LL5

Chair: **Timothy Allison - Southwest Research Institute**
Chair: **Michael Marshall - Southwest Research Institute**
Chair: **Giacomo Persico - Politecnico di Milano**
Presentations:

Hybrid sCO₂ and ORC Integration for Enhanced Waste Heat Recovery and Power Generation Efficiency, {GT2025-151616}

Technical Paper Publication

Babrar Khan - Czech Technical University
Jan Stepanek - Czech Technical University
Vaclav Dostal - Czech Technical University

Off-Design Performance of sCO₂ Waste Heat Recovery Cycles- implications of System Design, {GT2025-153591}

Technical Paper Publication

Shrey Gupta - Indian Institute of Science, Bangalore
Pramod Kumar - Indian Institute of Science Bangalore
Pramodchandra Gopi - Triveni Turbines Limited

Techno-Economic Evaluation of Waste Heat Recovery Systems for Industrial Decarbonization, {GT2025-153426}

Technical Paper Publication

Ladislav Vesely - University of Central Florida
Logan Rapp - Sandia National Laboratories
Jay Kapat - : University of Central Florida

04-41 Combustion Experiments V

6/19/2025

1:30 PM to 3:30 PM - 109 A/B

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **David Wu -**

Presentations:

Experimental Investigation of Strut Injectors for Hydrogen/Air Combustion at Atmospheric Pressure in Non-Reactive and Reactive Conditions, {GT2025-152481}

Technical Paper Publication

Vincent Gope - CORIA - CNRS UMR 6614
Alexis Vandel - CORIA - CNRS UMR 6614
Benjamin Quevreur - CORIA - CNRS UMR 6614
Maxim Kuvshinov - CORIA - CNRS UMR 6614
Pradip Xavier - CORIA - CNRS UMR 6614
Gilles Cabot - CORIA - CNRS UMR 6614
Frédéric Grisch - CORIA - CNRS UMR 6614

Characterization of Heat Transfer in a Trapped-Vortex Combustor Designed for High-Temperature Material Testing, {GT2025-152896}

Technical Paper Publication

Porter Richins - Pennsylvania State University
Caleb Clark - Pennsylvania State University
Madelyn Cassens - Gonzaga University
Stephen Lynch - Pennsylvania State University
Jacqueline O'Connor - Pennsylvania State University

Laminar Flame Speed Measurements of a NH₃/H₂/N₂ Natural Gas Surrogate at Elevated Pressures, {GT2025-153425}

Technical Paper Publication

Upom Louise Costa - Texas A&M University

Yousef Almarzooq - Texas A&M University
Adi Hardaya - Texas A&M University
Matthew Hay - Texas A&M University
Waruna Kulatilaka - Texas A&M University
Eric Petersen - Texas A&M University

27-06: Rub in Rotordynamics

6/19/2025

4:00 PM to 5:30 PM - 107 A/B

Chair: **Filippo Cangioli - Waukesha Bearings**

Chair: **Athanasios Chasalevris - National Technical University of Athens**

Chair: **Alice Innocenti -**

Presentations:

Detection of Rotor-Stator Contacts Using Continuous Wavelet Transform, {GT2025-151264}
Technical Paper Publication

Václav Houdek - Výzkumny a zkušební ústav Plzeň s.r.o.
Luboš Smolík - Research and Testing Institute Plzeň Ltd.
Zdeněk Kubín - Research and Testing Institute Plzeň Ltd.

Modeling Nonlinear Bearing and Rubbing Phenomena in Rotor-Stator Contact Using Nonlinear Frequency Response Analysis, {GT2025-153410}

Technical Paper Publication

Devesh Kumar - Boeing
Parag Mathuria - Pratt & Whitney
Phil Varney - Pratt & Whitney
Jianming Cao - Hexagon Manufacturing Intelligence
Don Powell - The Boeing Company
Gregory Savelle - Pratt & Whitney
J.S. Kumar - Hexagon Manufacturing Intelligence
Ted Rose - Hexagon Manufacturing Intelligence

04-36 Combustion Operations

6/19/2025

4:00 PM to 5:30 PM - 110

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Suresh Sadasivuni - Siemens Energy**

Chair: **Kexin Liu -**

Presentations:

Performance and Emission Footprint of Decentralized H₂/NH₃ Gas Turbines With On-Site Ammonia Decomposition and Exhaust Aftertreatment, {GT2025-151747}

Technical Paper Publication

Christian Gossrau - Institute for Power Plant Technology, Steam and Gas Turbines (RWTH Aachen University)
Nils Hendrik Petersen - Institute for Power Plant Technology, Steam and Gas Turbines (RWTH Aachen University)
Laurenz May - Institute for Power Plant Technology, Steam and Gas Turbines (RWTH Aachen University)
Manfred Wirsum - Institute for Power Plant Technology, Steam and Gas Turbines (RWTH Aachen University)

A FlameSheet™ Combustion System With Cracked Ammonia As a Fuel, {GT2025-152812}

Technical Paper Publication

Nicolas Demougeot - Power Systems Mfg.

Lucky Tran - Power Systems Mfg.

Fred Hernandez - Power Systems Mfg.

Ramesh Keshava Bhattu - Power Systems Mfg.

Bryan Kalb - Power Systems Mfg.,

Matthew Yaquinto - Power Systems Mfg.

Ryan Piersa - Power Systems Manufacturing

25-04/26-05 Joint Session - Probabilistic Fracture Prediction

6/19/2025

4:00 PM to 5:30 PM - 106

Chair: **Karl Michael Kraemer -**

Chair: **Felix Kölzow - Technical University Darmstadt**

Chair: **Christian Amann - Siemens Energy**

Presentations:

A Hybrid Stacked Ensemble Learning Framework Using a Time-Temperature Parameter Metamodel for Improved Creep Rupture Prediction, {GT2025-152252}

Technical Paper Publication

Mohammad Shafinul Haque - Angelo State University

Zakia Al Kadri - Angelo State University

A Multiscale Approach for Prediction of Failure Probabilities of Engine Components, {GT2025-152390}

Technical Paper Publication

Matthias Labusch - German Aerospace Center (DLR)

Lisa Reischmann - German Aerospace Center (DLR)

Milena Meurer - German Aerospace Center (DLR)

Stefan Reh - German Aerospace Center (DLR)

Probabilistic Crack Growth Behavior in Turbine Discs Using 3D Finite Element With Design of Experiment and Monte Carlo Method, {GT2025-153125}

Technical Paper Publication

MEHMET EMIN GENC - TUSAS Engine Industries

Sevket Ertekin - TUSAS Engine Industries

06-11 Advanced Simulation and testing

6/19/2025

4:00 PM to 5:30 PM - 112

Chair: **Ioannis Roumeliotis - Cranfield University**

Chair: **Ward De Paepe - UMONS**

Chair: **Alessandro Sorce - Università degli Studi di Genova**

Chair: **Lorenzo Ferrari - University of Pisa**

Chair: **Chaitanya Halbe - Carrier**

Presentations:

Experimental Analysis of the Dynamic Behavior of Centrifugal Compressors During the Transition From Stable to Surge Conditions, {GT2025-152436}

Technical Paper Publication

Vittorio Usai - University of Genoa

Silvia Marelli - University of Genoa

Paolo Silvestri - University of Genoa

A Gas Turbine Performance Simulator Utilising 2D Streamline Curvature Analysis for Axial Flow Turbomachinery, {GT2025-153377}

Technical Paper Publication

Jason Wu - PCA Engineers Ltd

Graham Cox - PCA Engineers Ltd

Comprehensive Method for Predicting Gas Turbine Cycle Performances Considering the Impact of Various Fuels, {GT2025-154023}

Technical Paper Publication

Milan V. Petrovic - University of Belgrade - Faculty of Mechanical Engineering

Djordje Petkovic - University of Belgrade - Faculty of Mechanical Engineering

Srdjan Milic - University of Belgrade - Faculty of Mechanical Engineering

Alexander Wiedermann - TU Kaiserslautern

Robert Krewinkel - Graz University of Technology, Institute for Thermal Turbomachinery and Machine Dynamics

01-13 Inlet Distortion and Engine Operability II

6/19/2025

4:00 PM to 5:30 PM - 111

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**

Chair: **Georgios Goinis - DLR**

Chair: **Curtis Vedder - Honeywell**

Chair: **William Cousins - Aerodynamic Technology Consulting LLC**

Presentations:

A Flow Physics Approach to Determining Critical Angle of Inlet Total Pressure Distortion for a Centrifugal Compressor, {GT2025-151711}

Technical Paper Publication

Evan H. Bond - Purdue University

Nicole L. Key - Purdue University

Flow Distortion in a Small Unmanned Aircraft Boundary Layer Ingestion Inlet, {GT2025-153304}

Technical Paper Publication

Tyler Zimbelman - Oklahoma State University

Kurt Rouser - Oklahoma State University

Experimental Deduction of Restitution Coefficients of Different Sand Sizes in an Inertial Particle Separator System, {GT2025-151869}

Technical Paper Publication

Halime Esra Işık - TUSAS Engine Industries (TEI)

Ahmet Saat - TUSAS Engine Industries (TEI)

Erinç Erdem - TUSAS Engine Industries (TEI)

Ahmet Arslan - TUSAS Engine Industries (TEI)

Mustafa Perçin - Middle East Technical University (METU)

FRIDAY, 6/20/2025

15-04: General Internal Cooling

6/20/2025

8:00 AM to 10:00 AM - LL6

Chair: **Riccardo Da Soghe** -

Chair: **Wontae Hwang** -

Chair: **Prashant Singh** - *University of Tennessee*

Chair: **Lesley Wright** - *Texas A&M University*

Chair: **Carl Sangan** - *University of Bath*

Chair: **Md. Nafiz Chowdhury** - *Oxford University*

Presentations:

Impinging Jet Flows – CFD Model Validation Using 3-D Magnetic Resonance Velocimetry Data, {GT2025-153089}

Technical Paper Publication

Martin Bruschewski - Universität Rostock - Lehrstuhl Strömungsmechanik (LSM)

Sven Grundmann - Universität Rostock - Lehrstuhl Strömungsmechanik (LSM)

Thorsten Hansen - ISimQ GmbH

Robert Krewinkel - Technische Universität Graz - Institut für Thermische Turbomaschinen und Maschinendynamik

Erik Munktel - Siemens Industry Software AB

Swantje Romig - Universität Rostock - Lehrstuhl Strömungsmechanik (LSM)

Georg Scheuerer - ISimQ GmbH

Carolin Wüstenhagen - Universität Rostock - Lehrstuhl Strömungsmechanik (LSM)

Comparative Investigation of HPT Blade Cooling Concepts in an Aerothermal Test Rig, {GT2025-153597}

Technical Paper Publication

Dogan Bicat - Institute of Thermal Turbomachinery

Knut Lehmann - Rolls-Royce Deutschland Ltd & Co KG

Jonas Schmid - Karlsruher Institut für Technologie - Institut für Thermische Strömungsmaschinen

Hans-Jörg Bauer - Karlsruher Institut für Technologie - Institut für Thermische Strömungsmaschinen

12-07: General Film Cooling Studies (II)

6/20/2025

8:00 AM to 10:00 AM - LL7

Chair: **Giovanna Barigozzi** - *Università degli Studi di Bergamo*

Chair: **Ardeshir Riahi** -

Chair: **Lesley Wright** - *Texas A&M University*

Chair: **Carl Sangan** - *University of Bath*

Chair: **Lamyaa El-Gabry** -

Chair: **Hui Tang** - *University of Bath*

Presentations:

Simplified Model and Approach to Transform Infrared Surface Temperature to Film Effectiveness in a Conjugate Heat Transfer Experiment, {GT2025-153214}

Technical Paper Publication

Douglas Straub - National Energy Technology Laboratory

Andrew Tulgestke - National Energy Technology Laboratory

Matthew Searle - National Energy Technology Laboratory

Owen Grabowski - National Energy Technology Laboratory

Justin Weber - National Energy Technology Laboratory

Comparisons of Measured Blade Temperatures With Predictions Using Available Correlations, {GT2025-154153}

Technical Paper Publication

Ethan F. Bonn - Pennsylvania State University

Nicholas L. Gailey - The Pennsylvania State University
Reid A. Berdanier - The Pennsylvania State University
Karen A. Thole - The Pennsylvania State University
Andrew N. Sung - Pratt & Whitney
Allan Arisi - Pratt & Whitney

Aerodynamic Analysis of the Effect of Coolant Crossflow Orientation on Film Cooling: Stereoscopic Particle Image Velocimetry of Cylindrical Film Cooling Holes, {GT2025-152834}
Technical Paper Publication

Marius Egner - Karlsruher Institut für Technologie - Institut für Thermische Strömungsmaschinen
Jonas Schmid - Karlsruher Institut für Technologie - Institut für Thermische Strömungsmaschinen
Hans-Jörg Bauer - Karlsruher Institut für Technologie - Institut für Thermische Strömungsmaschinen

34-08 CFD and Modeling Methods

6/20/2025

8:00 AM to 10:00 AM - LL4

Chair: **Jeff Defoe** -

Chair: **Martina Ricci** -

Chair: **Eric Monson** -

Presentations:

Application of the Pseudo-Spectral Time Marching Method to Blade Response Under Upstream Perturbations, {GT2025-152016}

Technical Paper Publication

Jesus Matesanz-Garcia - Universidad Politécnica de Madrid
Roque Corral - Universidad Politécnica de Madrid

Zonal Hybrid RANS-LES Simulation of a 1.5-Stage Turbine, {GT2025-152540}

Technical Paper Publication

Jonas Buchmeier - German Aerospace Center, Institute of Test and Simulation for Gas Turbines
Christian Morsbach - German Aerospace Center, Institute of Propulsion Technology
Patrick Bechlars - MTU Aero Engines AG

Rothalpy Conservation and Loss Calculations in Turbomachinery for Improved Modeling of Leakage, Thrust, and Component Performance, {GT2025-153024}

Technical Paper Publication

Mark Anderson - Concepts NREC

Integration Between a Secondary Air System Network and A Thermal Whole Engine Model for Gas Turbine Design, Using Simcenter 3D, {GT2025-151453}

Technical Paper Publication

Elias Ghossein - Maya HTT
Luca Andrei - Baker Hughes
Lorenzo Winchler - Baker Hughes
Sabrina Giuntini - Baker Hughes
Pancrazio Abate - Baker Hughes

04-17 Ignition

6/20/2025

8:00 AM to 10:00 AM - 109 A/B

Chair: **Samir Rida** -

Chair: **David Noble - EPRI**
Chair: **Michael Klassen - CSEFIRE**
Chair: **Ramees Rahaman - UCF**
Presentations:

Characteristic Time Scale Modelling of Gas Turbine Combustor Ignition Limits at Sub Idle Conditions, {GT2025-152864}

Technical Paper Publication

Calum Hargreaves - National Centre for Combustion and Aerothermal Technology, Loughborough University
Paul Denman - National Centre for Combustion and Aerothermal Technology, Loughborough University
Dimitri Franz - National Centre for Combustion and Aerothermal Technology, Loughborough University
Ian Mariah - National Centre for Combustion and Aerothermal Technology, Loughborough University
Jon Carrotte - National Centre for Combustion and Aerothermal Technology, Loughborough University
A Duncan Walker - National Centre for Combustion and Aerothermal Technology, Loughborough University

Predicting the Complex Dependence of Ignition Delay Times on Pressure Using Machine Learning, {GT2025-154194}

Technical Paper Publication

Benjamin Daniel Gerard - Syracuse University
Benjamin Akih Kumgeh - Syracuse University

23-08 Annular Seals

6/20/2025

8:00 AM to 10:00 AM - 106

Chair: **Steven Chatterton -**
Chair: **Jurg Schiffmann -**
Presentations:

Evaluation of Local Defects on Fractured-Ring Seal Leakage Rate, {GT2025-151971}

Technical Paper Publication

Justin Baldauff - Technetics Group
Stefan Roeseler - Technetics Group
Aaron Glafenhein - Technetics Group
Todd Adams - Technetics Group
Miguel Rodriguez - Technetics Group
Luis Carrasco - Technetics Group
Ryan Plessinger - Technetics Group
Erin Volpe - Technetics Group
Elaine Motyka - Technetics Group
Tyler Noyes - Technetics Group
Becca Jones - Technetics Group
Shannon Depratter - Technetics Group
Jonathan Kweder - Technetics Group

Leakage and Rotordynamic Characteristics for Three Types of Annular Liquid Seals Operating in a Liquid Hydrogen Turbopump, {GT2025-152577}

Technical Paper Publication

Xiaoqiang Ye - National Key Laboratory of Aerospace Liquid Propulsion
Haiyan Luo - Xi'an Jiaotong University
Wei Shen - Nuclear and Radiation Safety Center
Zhigang Li - Xi'an Jiaotong University
Jun Li - Xi'an Jiaotong University

Dynamic Characterization of Annular Gas Seals With 3D-Printed Texture Patterns, {GT2025-152781}

Technical Paper Publication

Seung-Hyeop Hyun - Turbomachinery Laboratory at Texas A&M University

Andrew Moody - Turbomachinery Laboratory at Texas A&M University
Adolfo Delgado - Turbomachinery Laboratory at Texas A&M University

Analysis of a Self-Contained ISFD With Circumferential Arc-Grooves Being Used As Oil Flow Restrictors, {GT2025-151421}

Technical Paper Publication

Xueliang Lu - Hunan SUND Technological Corporation
Tingcheng Wu - Air Products
Su Zheng - Hunan SUND Technological Corporation
Yabin Zhang - Hunan SUND Technological Corporation

40-04: Turbine Cavity Flows and Flowpath Geometry Effects I

6/20/2025

8:00 AM to 10:00 AM - LL2

Chair: **Alexander Hergt -**

Chair: **Yuan Dong - Pratt&Whitney**

Chair: **Dai Kato -**

Presentations:

An Experimental and Numerical Investigation of the Rotordynamic Coefficients of a Gas Labyrinth Seal: Part I – Experimental Results, {GT2025-152791}

Technical Paper Publication

Ciprian Comsa - Texas A&M University - Department of Aerospace Engineering
Seung Hyeop Hyun - Texas A&M University - Turbomachinery Laboratory
Adolfo Delgado - Texas A&M University - Department of Mechanical Engineering
Paul Cizmas - Texas A&M University - Department of Aerospace Engineering

The First Application of a Miniature Laser Doppler Velocimetry System for Time-Resolved Velocity and Turbulence Measurements in a Two-Spool Rig, {GT2025-154014}

Technical Paper Publication

Andreas Koschu - Graz University of Technology
Francesco Mangini - Graz University of Technology
Asim Hafizovic - Graz University of Technology
Nicolas Krajnc - Graz University of Technology
Marios Patinios - GE Aerospace
Pavel Svitek - Measurement Science Enterprise, Inc.
Robert Krewinkel - Graz University of Technology
Emil Göttlich - Graz University of Technology

Experimental Assessment of Squealer Tip Leakage Flow Structures in a Small-Core High-Speed Turbine, {GT2025-153754}

Technical Paper Publication

Antonio Castillo - Purdue University
Guillermo Paniagua Perez - Purdue University

01-01/05-07 Joint Session: Aero-Engine Control & Diagnostics

6/20/2025

8:00 AM to 10:00 AM - 111

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**

Chair: **Curtis Vedder - Honeywell**

Chair: **Donald Simon - NASA**

Chair: **Tamy Guimaraes - Penn State University**

Presentations:

Aerodynamic Performance Prognosis of Operationally-Used Aero Engine Compressor Blading, {GT2025-152042}
Technical Paper Publication

Ingo Voissel - Institute of Jet Propulsion and Turbomachinery
Siddhartha Kudeti - Institute of Jet Propulsion and Turbomachinery
Nils Budziszewski - MTU Maintenance Hannover
Christoph Bode - Institute of Jet Propulsion and Turbomachinery
Jens Friedrichs - Institute of Jet Propulsion and Turbomachinery

Natural Noise Feature Extraction in Sensor Data for Enabling Digital Twins and Real-Time Anomaly Detection, {GT2025-152290}
Technical Paper Publication

Ali Aghazadeh Ardebili - HSPI Roma
Antonella Longo - Data Lab, Department of Engineering for Innovation, University of Salento
Antonio Ficarella - Green Engine Lab, Department of Engineering for Innovation, University of Salento

Optimization of Variable Cycle Engine Throttle Schedules Using Gradient-Free Methods, {GT2025-152478}
Technical Paper Publication

Karel Van Den Borre - von Karman Institute for Fluid Dynamics
Bayindir H. Saracoglu - von Karman Institute for Fluid Dynamics

Study on the Impact of Variable Geometry Turbines on the Overall Performance of Aeroengines and Their Control Principles, {GT2025-153081}
Technical Paper Publication

Zhitao Wang - Harbin Engineering University
Xin Ren - Harbin Engineering University
Jingkai Zhang - Harbin Engineering University
Xingwei Zhou - Harbin Engineering University
Zijing Zheng - Harbin Engineering University

01-05 Engine Performance and Cycle Design III

6/20/2025

8:00 AM to 10:00 AM - 110

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**

Chair: **Curtis Vedder - Honeywell**

Chair: **Dimitra Tsakmakidou - Rolls Royce plc**

Chair: **Robert Clark - GE Aerospace**

Presentations:

Implementation of Inter Compressor Cooling in the Cycle Analysis of Hydrogen Powered Gas Turbine Engines Using Scalable Heat Exchanger Maps, {GT2025-151182}
Technical Paper Publication

Alexander Görtz - German Aerospace Center
Konstantinos Kyprianidis - Mälardalens University
Dimitrios Bermpers - Mälardalens University

Assessing the Impact of Turbofan Engine Design on Aircraft Contrail Properties, {GT2025-152085}
Technical Paper Publication

Joseph Ramsay - Rolls-Royce plc.
Indi Tristante - Rolls-Royce plc.
Shahrokh Shahpar - Rolls-Royce plc.
Alistair John - University of Sheffield

Optimum Pressure Ratio in a Turbojet Engine: Mathematical Expression to Determine the Pressure Ratio Required for Optimization of the Specific Thrust, {GT2025-153051}

Technical Paper Publication

Jedidiah C. Nevo - Carleton University
Karl Y. Kurniawan - Carleton University
Henry Saari - Carleton University
Hamza M. Abo El Ella - Carleton University

09-01 Compressed (CAES) and Liquid (LAES) Air Energy Storage

6/20/2025

8:00 AM to 10:00 AM - 113

Chair: **David Sanchez - University of Seville**

Chair: **Timothy Allison - Southwest Research Institute**

Presentations:

Multi-Objective Optimisation of Expansion Trains in CAES: Incorporating Organic Rankine Cycles for Improved Efficiency, {GT2025-154148}

Technical Paper Publication

Pablo Rodríguez-Deaerriba - University of Seville
Javier Baigorri - National Renewable Energy Centre
Francesco Crespi - University of Seville
Fritz Zaversky - National Renewable Energy Centre
David Sánchez - University of Seville

Definition of the Regulation Strategy of an A-CAES Power Generation Train Through Dynamic Modeling, {GT2025-153998}

Technical Paper Publication

Matteo Pettinari - University of Pisa
Guido Francesco Frate - University of Pisa
Lorenzo Ferrari - University of Pisa – DESTEC
Gianfranco Maffulli - Baker Hughes - Nuovo Pignone
Andrea Paggini - Baker Hughes - Nuovo Pignone
Andrew Mc Gillis - Hydrostor Inc.

Multi-Criteria Comparison of Commercial Scale ACAES With PTES for Grid and Energy Services, {GT2025-153053}

Technical Paper Publication

Syed Safeer Mehdi Shamsi - University of Genoa
Stefano Barberis - University of Genoa
Caesare Lancini - Baker Hughes
Gianfranco Maffulli - Baker Hughes
Davide Biliotti - Baker Hughes
Alberto Traverso - University of Genoa

Diabatic Liquid Air Energy Storage Systems, {GT2025-152338}

Technical Paper Publication

William Conlon - Pintail Power LLC
Milton Venetos - Pintail Power LLC

25-03 Deformation Modeling + Life Prediction

6/20/2025

8:00 AM to 10:00 AM - 105

Chair: **Karl Michael Kraemer** -
Chair: **Sevket Ertekin** - **TUSAS ENGINE INDUSTRIES**
Chair: **Amrita Basak** - **Pennsylvania State University**
Chair: **Ritam Pal** - **Pennsylvania State University**
Chair: **Calvin Stewart** - **Ohio State University**

Presentations:

Future Prediction of Phase Transition of Single Crystal Nickel Based Superalloys for Gas Turbine Blades via Discrete Cosine Transform and Maximum Entropy Method, {GT2025-151363}

Technical Paper Publication

Hideo Hiraguchi - The Institution of Professional Engineers, Japan (MEXT : Ministry of Education, Culture, Sports, Science and Technology, Japan)

Crystal Viscoplastic Modeling of Film Cooling Holes in Single Crystal Nickel-Based Superalloys, {GT2025-152140}

Technical Paper Publication

Navindra Wijeyeratne - Florida Polytechnic University

Ali P Gordon - University of Central Florida

Calvin Wright - Florida Polytechnic University

Load Spectrum Damage Analysis of Turbine Blade Based on Creep Deformation Simulation, {GT2025-153166}

Technical Paper Publication

Zhang Tong - Beihang University

Wang Yanrong - Beihang University

Jiang Xianghua - Beihang University

A Review of Multiaxial Fatigue Life Predictions Methods and a Novel Graphical User Interface, {GT2025-154093}

Technical Paper Publication

Jesus Lopez Leon - University of Central Florida

Nathan O'nora - Power Systems Mfg., LLC, a Hanwha company

Ali Gordon - University of Central Florida

06-13 Innovations in Bottoming Cycles and Components

6/20/2025

8:00 AM to 10:00 AM - 112

Chair: **Ioannis Roumeliotis** - **Cranfield University**
Chair: **Ward De Paepe** - **UMONS**
Chair: **Alessandro Sorce** - **Università degli Studi di Genova**
Chair: **Ladislav Vesely** -
Chair: **David John Rajendran** - **CRANFIELD UNIVERSITY**

Presentations:

Numerical and Experimental Analysis of Optimized Bladeless Turbines, {GT2025-152065}

Technical Paper Publication

Sai Kiran Chikatimarla - North Carolina State University

Bernard Killingbeck - Tree Associates

Helber Antonio Esquivel Puentes - Purdue University

Ramona Michelle Hilbert - Purdue University

Eckhard A Groll - Purdue University

James Braun - North Carolina State University

Optimal Cycle and Turbine Design for MW-Scale Waste Heat Recovery ORC With Partial Evaporation, {GT2025-153224}

Technical Paper Publication

Riccardo Gioia - Politecnico di Milano

Saverio Ottaviano - Università di Bologna
Alessandro Romei - Politecnico di Milano
Antonio Peretto - Università di Bologna
Lisa Branchini - Università di Bologna
Andrea Spinelli - Politecnico di Milano

Design Study of a Transcritical CO₂ Bladeless Expander Prototype, {GT2025-153922}
Technical Paper Publication

Ravi Nath Tiwari - TPG, University of Genova Italy
Alberto Traverso - University of Genova Italy
Kiavash Kamali - LFM, Dipartimento di Energia Politecnico di Milano, Italy
Giacomo Persico - LFM, Dipartimento di Energia Politecnico di Milano, Italy
Federico Gigliotti - DIEF, University of Florence, Italy
Daniele Fiaschi - Università degli Studi di Firenze

04-40: Emissions III

6/20/2025

8:00 AM to 10:00 AM - 108

Chair: **David Noble - EPRI**

Chair: **Samir Rida -**

Chair: **Ali Cemal Benim -**

Chair: **Michael Duesing -**

Presentations:

Combustion and Soot Formation From Sustainable Aviation Fuels Near the Lean Sooting Limit, {GT2025-153057}
Technical Paper Publication

Kevin Wan - Sandia National Laboratories
Junghwa Yi - Sandia National Laboratories
Julien Manin - Sandia National Laboratories

Evaluation of Combustion Models and Reaction Mechanisms to Predict NO_x and CO Emissions From Densely Distributed Lean-Premixed Multi-Nozzle CH₄/H₂/Air Flames, {GT2025-153086}

Technical Paper Publication

Sourabh Shrivastava - ANSYS Inc.
Kiyoun Jung - Ansys Korea
Abhijit Patil - Ansys Inc.
Ukhwa Jin - Korea Advanced Institute of Science & Technology (KAIST)
Pravin Nakod - Ansys Inc.
Kyu Tae Kim - Korea Advanced Institute of Science & Technology (KAIST)
Jeongwo Lee - Ansys Korea

Exploring Soot Pathways: High-Fidelity LES Investigation of Soot Formation and Oxidation in RQL Combustion Systems Under Real Conditions, {GT2025-153105}

Technical Paper Publication

Philipp Koob - Technical University of Darmstadt
Federica Ferraro - Technische Universität Braunschweig
Eggert Magens - German Aerospace Center
Johannes Heinze - German Aerospace Center
Thomas Soworka - German Aerospace Center
Thomas Behrendt - German Aerospace Center
Ruud Eggels - Rolls-Royce Deutschland Ltd & CO KG
Christian Hasse - Technical University of Darmstadt
Hendrik Nicolai - Technical University of Darmstadt

17-01 Industrial & Cogeneration

6/20/2025

8:00 AM to 10:00 AM - 114

Chair: **Clement Joly** -

Presentations:

Exploration of Exhaust Gas Recirculation for Improved Carbon Capture System Performance on a 3.5 MWe Liquid-Fueled Gas Turbine, {GT2025-151297}

Technical Paper Publication

Bianca Jeremiah - Colorado State University

Andrew Harrod - Colorado State University

Andrew Zdanowicz - Colorado State University

Tohuwalase Fosudo - Colorado State University

Bret Windom - Colorado State University

Design of Multi-Level Pumped Thermal Energy Storage Systems For Coupled Industrial Heat Supply, {GT2025-151724}

Technical Paper Publication

Alp Albay - Imperial College London

John Adeyemi - Imperial College London

Sharven Mahendren - Imperial College London

Mehmet Mercangöz - Imperial College London

15-03: Numerical Studies of Internal Cooling 2

6/20/2025

10:30 AM to 12:00 PM - LL6

Chair: **Riccardo Da Soghe** -

Chair: **Wontae Hwang** -

Chair: **Lesley Wright** - Texas A&M University

Chair: **Carl Sangan** - University of Bath

Chair: **Ali Ameri** -

Chair: **Lamyaa El-Gabry** - GE

Presentations:

Large-Eddy Simulation of Pulsating Turbulent Flow in a 45-Degree Ribbed Channel, {GT2025-153624}

Technical Paper Publication

Liang Zhou - Xi'an Jiaotong University

Tieyu Gao - Xi'an Jiaotong University

Ruihao Cheng - Xi'an Jiaotong University

Jianning Gong - Xi'an Jiaotong University

Jun Li - Xi'an Jiaotong University

Heat Transfer Enhancement in Double-Wall Blade Suction Side Using Large Eddy Simulation, {GT2025-153744}

Technical Paper Publication

Huihui Wang - Xi'an Jiaotong University

Qinghua Deng - Xi'an Jiaotong University

Zhenping Feng - Xi'an Jiaotong University

40-05: Turbine Cavity Flows and Flowpath Geometry Effects II

6/20/2025

10:30 AM to 12:00 PM - LL2

Chair: **Philipp Weggler - DLR**

Chair: **Alexander Hergt -**

Chair: **Robin Brakmann - DLR**

Presentations:

Experimental Investigation of Turbulence Inside an Annular Turbine Exit Guide Vane Cascade With Unsteady Wakes and Purged Cavity Using Constant Temperature Anemometry, {GT2025-152651}

Technical Paper Publication

Lukas Paier - Graz University of Technology

Malte Schien - Graz University of Technology

Asim Hafizovic - Graz University of Technology

Giorgia Teresa Bozzo - Graz University of Technology

Andreas Koschu - Graz University of Technology

Robert Krewinkel - Graz University of Technology

Andreas Marn - Graz University of Technology

Experimental Investigation of the Energy Distribution Among Turbulence Through Proper Orthogonal Decomposition Inside an Annular Turbine Exit Guide Vane Cascade With Purge Cavity Air, {GT2025-152949}

Technical Paper Publication

Giorgia Teresa Bozzo - Institute for Thermal Turbomachinery and Machine Dynamics, Graz University of Technology

Malte Schien - Institute of Thermal Turbomachinery and Machine Dynamics, Graz University of Technology

Asim Hafizovic - Institute of Thermal Turbomachinery and Machine Dynamics, Graz University of Technology

Lukas Paier - Institute of Thermal Turbomachinery and Machine Dynamics, Graz University of Technology

Andreas Koschu - Institute of Thermal Turbomachinery and Machine Dynamics, Graz University of Technology

Emil Göttlich - Institute of Thermal Turbomachinery and Machine Dynamics, Graz University of Technology

Robert Krewinkel - Institute of Thermal Turbomachinery and Machine Dynamics, Graz University of Technology

Andreas Marn - Institute of Thermal Turbomachinery and Machine Dynamics, Graz University of Technology

LES Analysis of a High-Pressure Turbine Rotating Blade Flow Including Purge and Tip Flows, {GT2025-153348}

Technical Paper Publication

Kenji Miki - NASA Glenn

Ali Ameri - The Ohio State University / NASA Glenn Research Center

Timothy Beach - HX5 LLC / NASA Glenn Research Center

Erlendur Steinthorsson - A&E Consulting, Inc./ NASA Glenn Research Center

Philip Poinsatte - NASA Glenn Research Center

Douglas Thurman - NASA Glenn Research Center

Allan Arisi - Pratt & Whitney

Robin Prenter - MacTaggart Scott & Co. Ltd.

Tyler Vincent - Pratt & Whitney

12-04: Film Cooling Computational Studies (II)

6/20/2025

10:30 AM to 12:00 PM - LL7

Chair: **Arnd Reichert -**

Chair: **Lamyaa El-Gabry -**

Chair: **Ardeshir Riahi -**

Chair: **Lesley Wright - Texas A&M University**

Chair: **Carl Sangan - University of Bath**

Chair: **Jae Um -**

Presentations:

Design Space Exploration Studies on the 777-Shaped Film Cooling Hole With Lattice Boltzmann Method, {GT2025-153331}

Technical Paper Publication

Avinash Jammalamadaka - Dassault Systemes North America

Gregory Laskowski - Dassault Systemes North America

Effect of Blowing Configurations on Heat Transfer Augmentation With Multihole Sweeping Jet Film Cooling, {GT2025-153525}

Technical Paper Publication

Hitesh Sharma - Indian Institute of Technology Kharagpur

K S Pavan Kumar - Indian Institute of Technology Kharagpur

Arnab Roy - Indian Institute of Technology Kharagpur

Chetan Mistry - Indian Institute of Technology Kharagpur

Effect of Inflow Turbulence on Heat Transfer Augmentation With Multihole Sweeping Jet Film Cooling, {GT2025-153531}

Technical Paper Publication

K S Pavan Kumar - Indian Institute of Technology Kharagpur

Hitesh Sharma - Indian Institute of Technology Kharagpur

Arnab Roy - Indian Institute of Technology Kharagpur

Chetan Mistry - Indian Institute of Technology Kharagpur

04-19 Kinetics II

6/20/2025

10:30 AM to 12:00 PM - 109 A/B

Chair: **Samir Rida** -

Chair: **David Noble** - **EPRI**

Chair: **Ponnuthurai Gokulakrishnan** - **Combustion Science & Engineering**

Chair: **Chao Xu** - **ANL**

Presentations:

Study of Exhaust Gas Recirculation (EGR) on the Operation of Liquid-Fueled Gas Turbines, {GT2025-153432}

Technical Paper Publication

Kingsley Essuman Atomboh - Colorado State University

Toluwalase Fosudo - Colorado State University

Bret Windom - Colorado State University

Extrapolated 20-30 atm Laminar Burning Speeds of Hydrogen-Enriched Natural Gas and Ammonia Mixtures From Empirical Correlations, {GT2025-155046}

Technical Paper Publication

Louis Yovino - UCF

Ahmed Safdari - UCF

Gihun Kim - UCF

Ramees Khaleel Rahman - UCF

Subith Vasu - UCF

23-05 Special Bearings

6/20/2025

10:30 AM to 12:00 PM - 106

Chair: **Bonjin Koo** - -

Chair: **Jurg Schifffmann** -

Presentations:

A Novel Measurement Method for Investigating the Lift-Off Behavior of Gas Polymer Bearings, {GT2025-153928}
Technical Paper Publication

Aryan Ghomashi - Technische Universität Berlin
Robert Liebich - Technische Universität Berlin

Stability Analysis of Flexible Rotor Supported by Active Hybrid Bearing With Fuzzy Logic-Based Control, {GT2025-153103}
Technical Paper Publication

Wenjie Gong - Harbin Institute of Technology
Guanghui Zhang - Harbin Institute of Technology
Zehao Lin - Harbin Institute of Technology
Kefan Xu - Harbin Institute of Technology
Jiazhen Han - Harbin Institute of Technology
Yanzhong Huang - Harbin Institute of Technology
Zhongwen Huang - Nanjing Engineering Institute of Aircraft Systems, Aviation Industry Corporation of China

A Case Study of Low-Frequency Axial Vibrations in Synchronous Condensers, {GT2025-151332}
Technical Paper Publication

Christoph Weissbacher - Gleitlagertechnik Weißbacher GmbH
Jörg Derdulla - Siemens Energy Global GmbH & Co. KG
Ingo Balkowski - Siemens Energy Global GmbH & Co. KG

40-01: Stall and Surge in Centrifugal Machines

6/20/2025

10:30 AM to 12:00 PM - LL1

Chair: **Alexander Hergt** -

Chair: **Herbert Harrison** - NASA

Chair: **William Brown** - Purdue University

Presentations:

The Influence of Diffuser Vanes on Stall and Surge in an Industrial Centrifugal Compressor, {GT2025-151313}
Technical Paper Publication

Julian Stemmermann - Institute of Jet Propulsion and Turbomachinery, RWTH Aachen University
Peter Jeschke - Institute of Jet Propulsion and Turbomachinery, RWTH Aachen University

Surge Inception Point Analysis Using the Greitzer Model for Centrifugal Compressor, {GT2025-151382}
Technical Paper Publication

Abdul Basit - Institute of Turbomachinery, Lodz University of Technology
Grzegorz Liskiewicz - Institute of Turbomachinery, Lodz University of Technology
Marek Balcerzak - Division of Dynamics, Lodz University of Technology

Investigation of Rotating Stall in Vaneless Diffuser of Single-Stage Centrifugal Blower Using Wall-Resolved Large Eddy Simulation, {GT2025-153460}
Technical Paper Publication

Kazuhiro Tsukamoto - Hitachi, Ltd. Research & Development Group
Chisachi Kato - Nihon University

37-05 Radial Turbomachinery Modelling

6/20/2025

10:30 AM to 12:00 PM - LL3

Chair: **Bob Mischo - MAN Energy Solutions**
Chair: **Jeffrey Krise - Honeywell**
Chair: **Franco Domenig - Accelleron Industries**
Presentations:

Research on the Flow Field and Performance Characteristics of a Novel Reference Design Centrifugal Compressor for Refrigerant Compression, {GT2025-152113}
Technical Paper Publication
Vlad Goldenberg - SoftInWay Inc.
Ben Conser - SoftInWay Inc.
Andrey Sherbina - SoftInWay Switzerland GmbH
Anna Vorobyova - SoftInWay Switzerland GmbH

Investigation of Effect of Seal Clearance on the Performance Characteristics of a High Flow Coefficient Stage, {GT2025-153441}
Technical Paper Publication
Kapil V. Panchal - Ebara Elliott Energy
Takayuki Suzuki - Ebara Elliott Energy

A New Body Force-Based Modelling Approach for Centrifugal Compressor Post-Stall Aerodynamics, {GT2025-153790}
Technical Paper Publication
Dimitrios Lamprakis - Cranfield University
Mauro Righi - Cranfield University
Vassilios Pachidis - Cranfield University

01-10 Modelling, Simulation and Validation II

6/20/2025

10:30 AM to 12:00 PM - 111

Chair: **Mavroudis Kavvalos - German Aerospace Center (DLR)**
Chair: **Curtis Vedder - Honeywell**
Chair: **John Spyropoulos - NAVAIR Propulsion & Power**
Chair: **John Gillespie - Virginia Tech**
Presentations:

On a Novel Co-Rotating Synchronous Turbine Mode Operation in a Centrifugal Compressor, {GT2025-153919}
Technical Paper Publication
David John Rajendran - Rolls-Royce UTC, Cranfield University
Eduardo Anselmi Palma - Rolls-Royce UTC, Cranfield University
Ioannis Roumeliotis - Rolls-Royce UTC, Cranfield University
Vassilios Pachidis - Cranfield University
Dave Sayre - Rolls-Royce Corporation
Nicholas Howarth - Rolls-Royce plc.

A Novel Spatial Transformer Framework for Compressor Map Adaptation, {GT2025-153174}
Technical Paper Publication
Tao Song - Tsinghua University
Chao Liu - Tsinghua University
Dongxiang Jiang - Tsinghua University

19-05 Modeling

6/20/2025

10:30 AM to 12:00 PM - 114

Chair: **Aaron Rimpel - Southwest Research Institute**

Chair: **HARA PRAKASH MISHRA -**

Presentations:

A Novel Reduced-Order Mathematical Model for Radial Turbines, {GT2025-151797}

Technical Paper Publication

Katherine Powers - Simon Fraser University

Jamie Archer - Cummins Inc.

Colin Copeland - Simon Fraser University

Effect of Impeller Design on the Performance of a Small-Scale Regenerative Blower With Semi-Circular Side-Channel and Rotor Cross-Sections, {GT2025-152199}

Technical Paper Publication

Lars Kirchhof - University of Stuttgart

Jette Lorschach - University of Stuttgart

Carsten Mehring - University of Stuttgart

Challenges in Aerodynamic Performance of Micro Gas Turbines and Design Inefficiencies, {GT2025-152490}

Technical Paper Publication

Qiming Yu - The University of Sheffield

Robert Howell - The University of Sheffield

28-05: Mistuning of bladed disks

6/20/2025

10:30 AM to 12:00 PM - 107 A/B

Chair: **Luigi Carassale -**

Chair: **Jeffrey M. Brown - USAF**

Chair: **Daniel Gillaugh - USAF**

Presentations:

Implementation of Intentional Mistuning by Means of Finite Element Based Shape Optimization, {GT2025-151617}

Technical Paper Publication

Bernd Beirow - Brandenburg University of Technology

Alex Nakos - Brandenburg University of Technology

Caroline Stecklina - Brandenburg University of Technology

Martin Noack - FEMopt Studios GmbH

Matthias Firl - FEMopt Studios GmbH

Sasakaros Marios - RWTH Aachen University

Reduced-Order Modeling of Rotor Blades With Geometric Uncertainties, {GT2025-153549}

Technical Paper Publication

Abdelhakim Bouras - University of Genova

Javier González-Monge - Universidad Politécnica de Madrid

Luigi Carassale - University of Genova

Comparative Experimental Determination of Mistuning of a Bladed Turbine Wheel Using Different Evaluation Approaches, {GT2025-151778}

Technical Paper Publication

Alex Nakos - Brandenburg University of Technology

Bernd Beirow - Brandenburg University of Technology

30-09 Oxy-Fuel Combustion

6/20/2025

10:30 AM to 12:00 PM - LL5

Chair: **Timothy Allison - Southwest Research Institute**

Chair: **Ramees Rahaman - UCF**

Chair: **Vlad Goldenberg - SoftInWay**

Presentations:

Detailed Design and Cost Estimation of a 300 MWe Oxy-Fuel sCO₂ Turbine, {GT2025-154107}

Technical Paper Publication

Michael Marshall - Southwest Research Institute

Mark Anguiano - Southwest Research Institute

Jason Bensmiller - Southwest Research Institute

Cole Replogle - Southwest Research Institute

Thomas Kerr - Southwest Research Institute

John Klaerner - Southwest Research Institute

J. Jeffrey Moore - Southwest Research Institute

Impact of Different Equations of State on Allam Cycle Efficiency, {GT2025-153655}

Technical Paper Publication

Emanuela Alfarano - Baker Hughes

Ever Avriel Fadlun - Baker Hughes

Francesco Fantozzi - Università di Perugia

04-38 Ammonia Combustion II

6/20/2025

10:30 AM to 12:00 PM - 108

Chair: **Samir Rida -**

Chair: **Francesco Di Sabatino - SWRI**

Chair: **Prakash Dalsania - GE Vernova**

Chair: **David Noble - EPRI**

Presentations:

Optimization of a Secondary Air Injector for a Rich-Quench-Lean (RQL) Ammonia Combustor Using Computational Fluid Dynamics, {GT2025-154018}

Technical Paper Publication

Justin Weber - National Energy Technology Laboratory

Kristyn Johnson May - National Energy Technology Laboratory

Clinton Bedick - National Energy Technology Laboratory

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