3rd Colloquium on

Separation control in high-speed flows – mechanisms, methods, and application

Day 1: 3.9.2025	
8:00 – 9:00	Registration
9:00 – 9:15	Opening
9:15 – 10:30	Keynote 1: **Stefan Hickel**, *Technische Universiteit Delft, The Netherlands* On shock-wave/boundary-layer interactions
10:30 – 11:00	Coffee break
	Session 1: Phenomena, structures, and mechanisms in high-speed flows with separation
11:00 – 11:30	S. Vayala[1], K. Ramachandra[2], K. Abhishek[1], N. R. Vadlamani[1], **R. Sriram**[1] *1Department of Aerospace Engineering, Indian Institute of Technology Madras, Chennai, India* *2Department of Engineering, University of Cambridge, Cambridge, United Kingdom* Unsteadiness in bow shock induced 3 dimensional separation
11:30 – 12:00	**Vinicius Sepetauskas**[1,2], Sebastien Piponniau[2], Daniel Mazzoni[3], Muriel Amielh[3] and Pierre Dupont[2] *1CNES, Space Transportation Directorate - Paris, France,* *2Aix Marseille University, CNRS, IUSTI, Marseille, France,* *3Aix Marseille University, CNRS, ECM, IRPHE, Marseille, France* Free Shock Separation with Acoustic Downstream Excitation
12:00 – 12:30	**Skander Kamoun**, Thorsten Lutz *University of Stuttgart, Institute of Aerodynamics and Gas Dynamics, Stuttgart, Germany* University of Stuttgart, Institute of Aerodynamics and Gas Dynamics, Stuttgart, Germany
12:30 – 13:45	Lunch break
13:45 – 14:15	**Christopher Schauerte**[1], Anne-Marie Schreyer[2] *1 Institute of Aerodynamics, RWTH Aachen University, Germany* *2 Hochschule München University of Applied Sciences, Munich, Germany* Turbulent wake interaction under the influence of transonic buffet
14:15 – 14:45	Plenary discussion 1
14:45 – 16:00	Keynote 2: **Shashi Bhushan Verma**, *National Aerospace Laboratories, Bangalore, India* Studies on Shock/Boundary-Layer Interaction Control in NAL
16:00 – 16:30	Coffee break
	Session 2: Physics of control
16:30 – 17:00	**Luis Laguarda**, Kjeld Teunissen, Francisco Dores, Stefan Hickel *Department of Flow Physics and Technology, Faculty of Aerospace Engineering, TU Delft, The Netherlands* STBLI control with actuated jets and perforated walls
17:00 – 17:30	**Lukasz Klotz** *Institute of Aeronautics and Applied Mechanics (IAAM), Warsaw University of Technology, Warsaw, Poland* Experiments on a jet in a crossflow in the low-velocity-ratio regime

17:30 – 18:00	**Kannan Ramachandra**, Luke Waddell, Holger Babinsky *Department of Engineering, University of Cambridge, Cambridge, United Kingdom* Control Bump for a Ramp-induced SBLI − A Discussion of the Flow Physics
18:00 – 18:10	Plenary discussion 2
18:30 – 18:40	Concluding remarks

Day 2: 4.9.2025	
08:30 – 09:45	Keynote 3: **Marlyn Y. Andino**, *NASA Langley Research Center, Hampton, VI, USA* Aerodynamic Performance Improvement: Active Flow Control Application on the NASA CRM-HL Aileron
	Session 3: Active and passive control methods and potential of current control approaches to technical applications
09:45 – 10:15	**Stefan Hayböck**, Christian Breitsamter *Chair of Aerodynamics and Fluid Mechanics, Technical University of Munich, Garching, Germany* Implementation of an Active Flow Control System on a Short-Inlet Ultra-High Bypass Ratio Engine Nacelle
10:15 – 10:45	**Farrukh Alvi**[1], Rajan Kumar[1], Datta Gaitonde[2] *1 Department of Mechanical Engineering, Florida Center for Advanced Aeropropulsion, FAMU-FSU College of Engineering, Florida State University, USA* *2 Department of Mechanical and Aerospace Engineering, Ohio State University, USA* Active Control in Supersonic Flows – Actuators and Applications
10:45 – 11:15	Coffee break
11:15 – 11:45	**Joachim Klinner**, Edwin Munoz Lopez, Alexander Hergt, Christian Willert *Institute of Propulsion Technology German Aerospace Center (DLR), Köln, Germany* High-Speed Schlieren and PIV in a Transonic Compressor Cascade with Shock Control Bumps
11:45 – 12:15	**Ahmed H. Hanfy**1, Paweł Flaszynski2, Piotr Doerffer3, Piotr Kaczynski4 *Institute of Fluid-Flow Machinery, Polish Academy of Sciences (IMP PAN), Gdansk, Poland* Investigation of surface texture effect on shock wave boundary layer interaction on transonic fan profile
12:15 – 12:45	Plenary discussion 3
12:45 – 13:45	Lunch
13:45 – 15:00	Keynote 4: **Pawel Flaszynski** *Institute of Fluid Flow Machinery, Polish Academy of Sciences, Gdansk, Poland* Passive flow control to mitigate the effects of boundary layer separation
15:00 – 15:30	Session 4: Successful collaborations between experimental and numerical approaches
15:30 – 16:00	**Gazi Hasanuzzaman** and Christoph Egbers *Department of Aerodynamics and Fluid Mechanics, Brandenburg University of Technology Cottbus-Senftenberg, Cottbus, Germany* Data-Driven Reconstruction of Coherent Structures in Complex Shear Flows with Wall-Normal Uniform Blowing

16:00 – 16:30	Vanessa Rubien[1], **Christopher Schauerte**[2], Anne-Marie Schreyer[3], Iván Bermejo-Moreno[1] *1 University of Southern California, Los Angeles, USA* *2 Institute of Aerodynamics, RWTH Aachen University, Germany* *3 Hochschule München University of Applied Sciences, Munich, Germany* Numerical-experimental collaboration on confinement effects in wind-tunnel experiments for transonic buffet
16:30 – 16:40	High-speed coffee break
16:40 – 18:30	City tour
18:30 – 23:00	Conference dinner

Day 3: 5.9.2025	
09:00 – 09:30	Plenary discussion 4
09:30 – 10:45	Keynote 5: **Neil Sandham**, *University of Southampton, UK* Numerical simulations of transitional separation bubbles in transonic, supersonic and hypersonic flows: identification of mechanisms relevant to flow control
10:45 – 11:15	Coffee break
	Session 5: Methods and approaches for the analysis of SWBLI and separation control
11:15 – 11:45	**Joshua Langfield**, Kshitij Sabnis *School of Engineering and Materials Science, Queen Mary University of London, UK* Enhancing the Effective Temporal Resolution of Schlieren Imaging for Studies of Separation Control Concepts
11:45 – 12:15	**Tim Rödiger** *Chair of Fluid Mechanics, Heat Transfer, and Energy, UAS Landshut, Germany* Atomic Layer Thermopiles - Fast response heat-flux and temperature sensors for the investigation of high-speed flow phenomena
12:15 – 12:45	**Edwin J. Munoz Lopez**, Alexander Hergt, Christian Voss *German Aerospace Center (DLR), Institute of Propulsion Technology, Cologne, Germany* Advanced optimization techniques for the mitigation of shock-boundary layer interactions via flow control methods
12:45 – 13:15	Plenary discussion 5 Concluding remarks
13:15 – 15:00	Lunch & Further discussion