

2nd Colloquium on Separation Control in High-Speed Flows  
25 - 27 September 2023, Aachen, Germany

## Title of the contribution

Anne-Marie Schreyer<sup>1</sup>, Holger Babinsky<sup>2</sup>

<sup>1</sup>*Institute of Aerodynamics, RWTH Aachen University, Aachen, Germany*

*E-mail: a.schreyer@aia.rwth-aachen.de*

<sup>2</sup>*Engineering Department, University of Cambridge, UK*

*E-mail: hb@eng.cam.ac.uk*

*Keywords:* Keyword1, keyword2, keyword3.

Please summarize the motivations of your research, the methodologies you used, as well as the main results and conclusions. Representative figures to highlight your main results are appreciated. Acknowledgments and selected references should be placed at the end of your abstract. Please limit your abstract to two pages. The deadline for abstract submission is June 15, 2023.

Please send the abstract to:

SeparationControl@aia.rwth-aachen.de

and let us know, which of the five topics (mentioned below) your contribution is best suited for.

A text sample is provided below.

Flow separation in high-speed flows significantly influences the aerodynamic behavior and functionality of many technical applications, especially in the domain of aerospace transportation and propulsion. To mitigate the associated detrimental effects and consequentially allow increased operational ranges and lighter designs, separation control is needed [1, 2]. The development of effective and efficient separation control with real potential for industrial application requires the successful integration of a variety of research areas and approaches. An understanding of fundamental flow physics is as essential for targeted control measures as an awareness of their sensitivity to the relevant control parameters and requirements of engineering applications. This colloquium provides a platform for discussion and scientific exchange between the leading scientists and experts in the field pursuing basic research, applied research, and development of industrial solutions. It will therefore advance the general understanding of the flow physics in separation control and its potential for engineering applications, as well as encourage closer collaborations. Topics to be included are:

- Phenomena, structures, and mechanisms, in high-speed flows with separation
- Passive and active control strategies and methods
- Physics of separation control
- Successful collaborations between experimental and numerical approaches – success factors
- Potential of current control approaches to practical applications

### *Acknowledgments*

The presented research has received funding from the German Research Foundation (DFG) within the framework of the Emmy Noether Programme (Grant SCHR 1566/1 "Separation control with Air Jet Vortex Generator arrays in transonic and supersonic flow").

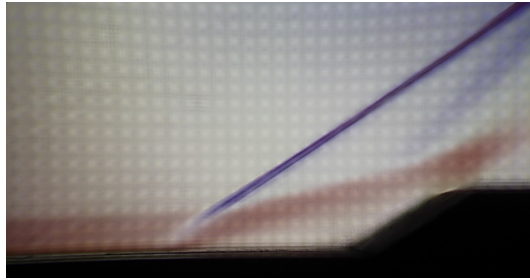


Figure 1: Visualization of a compression-ramp interaction with large-scale separation.

#### References

- [1] Pearcey, H., Shock-induced separation and its prevention by design and boundary layer control, In: Lachmann, G. (Ed.) *Boundary Layer and Flow Control: Its Principles and Application*, Part IV, Vol. 2, Pergamon, Oxford, pp. 1166–1344, 1961.
- [2] Délery, J. M., Shock wave/turbulent boundary layer interaction and its control, *Progress in Aerospace Sciences* 22 (4), pp. 209–280, 1985.