

Scale-resolving simulations of fluidic actuators

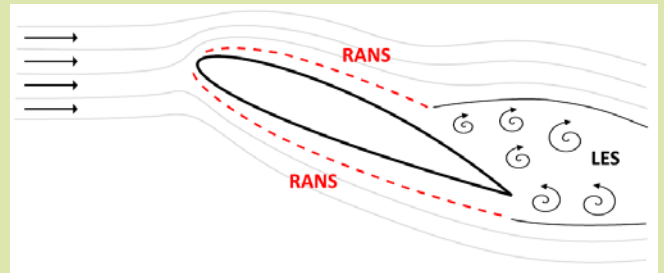
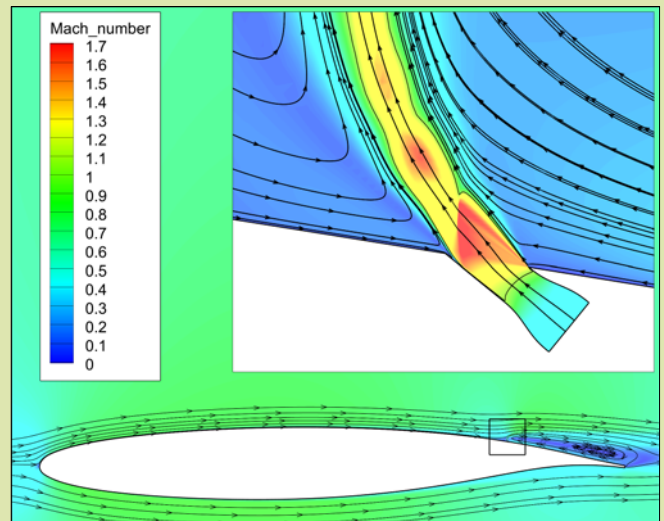
Student assistant position – HiWi (w/m/d)

Goals

Fluidic actuators (i.e. surface jets) offer the potential to rapidly and effectively alleviate gust-induced loads on aircraft wings. Understanding the interaction between the surface jet, the cross-flow/ boundary layer, and the external flow is essential for improving the efficiency of the system. Scale-resolving simulations (SRS) are to be conducted in order to gain deeper insights into these effects. Detached eddy simulation (DES) will be used to resolve the unsteady structures of the separation region that is enforced by the surface jet.

Tasks

- Setup and execution of DES of a surface jet actuator system integrated on a 2.5D wing section (student will be trained with DLR-TAU).
- Development of post-processing and evaluation routines.
- Evaluation of the unsteady interaction between the angled jet and the wall boundary layer
- Comparison with and validation of 2D RANS simulations



Requirements

- Experience with practical application of numerical methods. Experience with SRS is beneficial.
- Basic knowledge of Python and/or Matlab.
- Fluent in English written and spoken.
- Independent and structured way of working; ability to quickly familiarize with new topics.
- Interest in aerospace research and fluid mechanics.

Benefits

- Payment according to the guideline of TdL.
- Start possible at any time.
- Flexible way of working: flexible working hours and remote working.
- Possibility to write a student thesis subsequently.
- Contribution to research on sustainable aviation technologies.



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**I look forward to receiving
your application!**

Please send me your CV and a current overview of your grades via e-mail.