



Adaption of integral boundary layer methods to suction and artificial transition

Project Description

Integral boundary layer methods are a simple and extremely fast way to predict boundary layer development for, both, laminar and turbulent boundary layers (BLs) and they can easily be coupled to transition prediction methods. However, such methods require closure conditions, which are typically developed from similarity solutions. For some cases, closure based on similarity is not possible and this is particularly the case for laminar boundary layers with suction and for practical transition fixing (e.g. zigzag-tapes on the airfoil surface).

The project is to adapt an integral boundary layer code (e.g. *Drela & Giles (1985)*), as used in the XFOIL-code) and to develop new closure conditions. Comprehensive experimental data is available from the past and present SE2A projects. LES data is available. Additional data could be generated in the project with suitable RANS-simulations.

Requirements

- Profound knowledge in aerodynamics, boundary layer theory and airfoil flows
- Some experience with aerodynamic simulation methods, coding of methods
- Self-initiative and result-oriented working approach, creative approach for developing innovative methods and solutions
- Good command of written and spoken English

Contact information

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The entry date is as soon as possible, and the duration of employment is limited to 6 months. The position is part-time with 50% of the regular weekly working time (currently 19,9h). Ongoing applications are possible until all positions are filled.

The payment is made according to task assignment and fulfillment of personal requirements to salary group EG 13 TV-L. International applicants may have to successfully complete a visa process before hiring can take place. Candidates with handicaps will be preferred if equally qualified. Please enclose a proof. The position is part of the SE2A International Female Programme, so only applications by female graduates of non-German universities are possible.

All documents should be in PDF format, preferably in a single file. Personal data and documents relating to the application process will be stored electronically. Please note that application costs cannot be refunded.