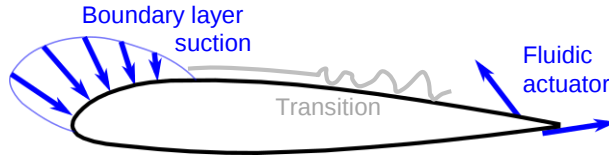


Multiple topics on flow control and aircraft aerodynamics

Student thesis projects (Master Thesis / Studienarbeit)

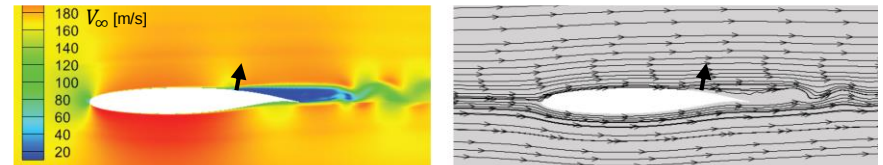
Interaction of BL suction and blowing

- CFD study on combined effects of boundary layer (BL) suction and gust load alleviation
- **Steps:** Introduction to TAU solver, modelling of gusts, suction/blowing, transition; 2D meshing; parametric investigation of mutual interactions



Load alleviation with multiphase actuation

- Validation of multiphase flow simulations with wind tunnel test of water jet in cross-flow



- **Steps:** Design and execution of wind tunnel validation experiment for water jet simulations, multiphase flow simulations, comparison of results

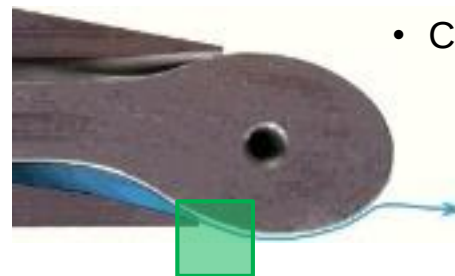
Design and characterization of high-lift system



- Design of high-lift system with trailing edge flap and droop-nose for aircraft with laminar wing

- **Steps:** Introduction to TAU solver, suction, and transition; design and simulation of 2D sections with high-lift devices, simulation on 3D wing

Characterization of a Coanda jet



- Coanda jet characterization on wind tunnel model with PIV and hot wire measurements

- **Steps:** Introduction to micro-PIV and hot-wire anemometry, preparation of Coanda model for wind tunnel test, measurement and data analysis