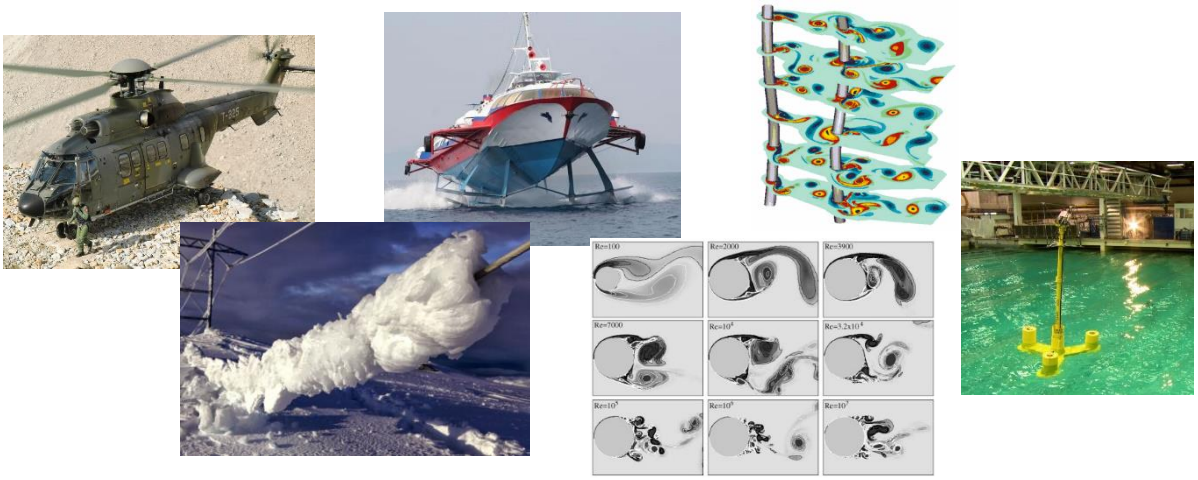
New lecture series in Master's programme for WS2024/25

Flow-induced Vibrations of Bluff-body Structures



The lecture series focuses on the physical understanding, mathematical prediction, and possible prevention of different types of vortex- and motion-induced vibrations that result from massive flow separation, and the ensuing (partly catastrophic) aero- and hydroelastic problems that may occur

Degree programme(s): Aerospace Engineering, Mechanical Engineering, Industrial and Mechanical Engineering, Automotive Engineering

Lecturer: Dr.-Ing. N. van Hinsberg (DLR Göttingen)

Type of course: Lecture series and numerical exercises in OpenFOAM

Content: static and dynamic aeroelastic problems, steady and unsteady aerodynamics of bluff bodies, potential theory, boundary layer behaviour and detached flows, properties and phenomena of vortex-induced and motion-induced vibrations, differences between forced and free structural oscillations, one- and two-degrees-of-freedom galloping, (wake-induced) flutter, turbulence-induced buffeting, linear and non-linear quasi-steady and unsteady modelling of structural oscillations, methods of prevention and damping

Period: Monday 7 October – Friday 11 October: 9–12 + 14–17 (Hörsaal ISM)