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23/05/2014

EINLADUNG

zu einem Vortrag im Rahmen des

Kolloquiums Thermo- und Fluidodynamik

- Datum:** >> **Montag, 7. Juli 2014** <<
- Zeit:** >> **11:15 Uhr** <<
- Ort:** Maschinenlaboratorium ETH Zürich
Hörsaal ML H 44
- Referent:** **Prof. Neil Sandham**
Engineering and the Environment, University of Southampton, UK
- Titel:** **Wall Turbulence: From Surface Roughness to Surface Slip**

Partial slip offers a possible route to drag reduction. A promising technique is based on textured hydrophobic surfaces in water: if an air layer can be retained near the surface a significant drag reduction is theoretically possible. The present work includes a mix of simulation and experiment. Calculations in the laminar flow regime show delays in separation that offer significant drag reductions (10-20%) even when the surface texture (roughness) necessary to retain the air layer is included in the model. Fully turbulent simulations using the Navier-slip condition show the importance of slip anisotropy, and roughness-resolving calculations quantify the drag penalty of the underlying surface. Finally a set of experiments are conducted using a treated test surface that is towed through water in the turbulent flow regime. Air layers are retained during the tests and drag reductions relative to wetted surfaces are measured.

Host: Prof. L.Kleiser

Gäste sind willkommen!