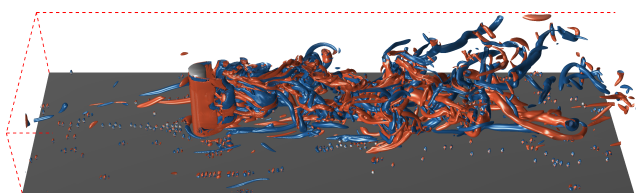
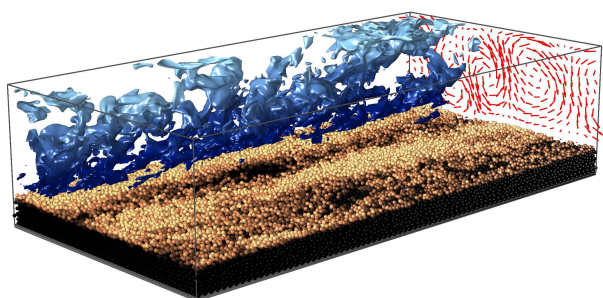


## Particle-resolved DNS of scour around wall-mounted cylinders (PhD studentship)

We are looking for a motivated person to work in a funded research project in the area of turbulent particulate flow. The goal of the project is to investigate the dynamics of local sediment erosion induced by a wall-mounted obstacle, as it frequently occurs e.g. due to structures built into river beds. A better understanding of the fluid-particle interaction mechanisms can be expected to pave the way for the design of better engineering tools.

In our research group we are using high-fidelity numerical methods to investigate large-scale particulate flow systems with relevance to various technical and natural applications. The approach relies on massively-parallel simulations, leading to large amounts of raw data which need to be explored and efficiently analyzed in order to reveal the underlying physics.



(Left) Open channel flow over a mobile sediment bed. (Right) Particle motion around a wall-mounted cylinder over a smooth surface.

The activity involves method and code development, design of numerical experiments, data analysis, physical modeling and scientific writing/presentation.

The candidate should:

- hold a university degree in engineering, physics or applied maths;
- have very good knowledge in fluid mechanics and turbulence;
- have acquired programming skills in Fortran, C or C++;
- possess good communication skills and motivation to work in a team.

The position is to be filled as soon as possible. The funding will run for three years (full time, salary according to public pay grade "TVL E13"). We offer the following benefits:

- working in a stimulating scientific environment;
- access to top-notch super-computing facilities;
- research at the frontier of turbulent multi-physics;
- cutting edge numerical approaches.

### Contact:

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