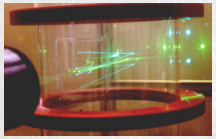
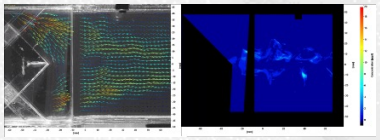
Methods and Equipment

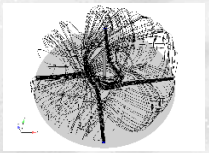
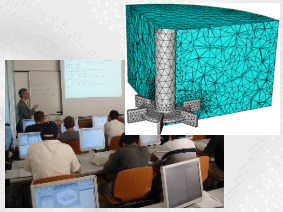
- Classical and optical measurement techniques for single- and two-phase flows, possibly with chemical reactions (LDA/PDA, shadow imaging, PIV, LIF, PTV, Raman, Rayleigh, spectroscopy...)

- Simultaneous non-intrusive measurements



- Numerical simulation codes for specific investigations (turbulent flows with chemical reactions, medical flows, two-phase flows...), as well as for the analysis of industrial installations and processes
- HPC-Cluster for research and teaching
- Flow optimization

- Permanent experimental set-ups: two-phase wind tunnel; open and closed water channels; gravity-driven flow installations; bubble columns; two-phase flows; mixing and separation

- Rheology lab for measurements of fluid properties

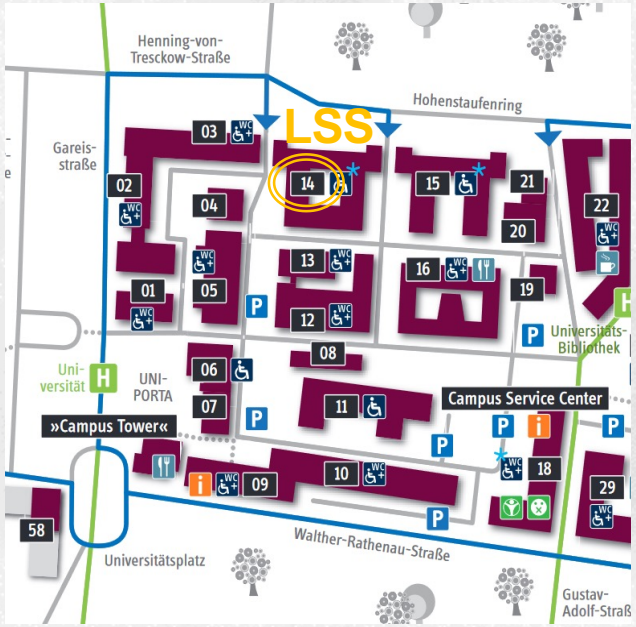
Laboratory of Fluid Dynamics and Technical Flows

Prof. Dominique Thévenin
Assoc. Prof. Gábor Janiga

Otto-von-Guericke-Universität Magdeburg
Universitätsplatz 2
39106 MAGDEBURG
Germany

Telephon : [+49] - 391-67 58654
Fax : [+49] - 391-67 42840

E-mail : lss@ovgu.de
Internet : https://www.lss.ovgu.de



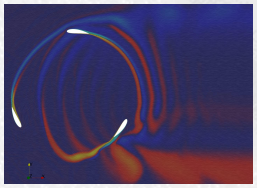
Laboratory of Fluid Dynamics and Technical Flows

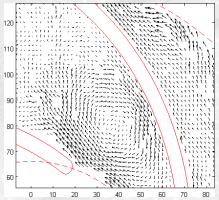
Laboratory of Fluid Dynamics and Technical Flows (LSS/ISUT)
Otto-von-Guericke-Universität Magdeburg
Universitätsplatz 2
39106 MAGDEBURG

Phone : [+49] - 391-67 58654
lss@ovgu.de
https://www.lss.ovgu.de

Turbomachines

- Flow investigations using PIV, including off-design regimes
- Optimization of water and wind turbines
- Fluid-Structure Interaction
- Behavior and efficiency of centrifugal pumps for two-phase flows
- Validation of numerical simulations
- Influence of inflow conditions

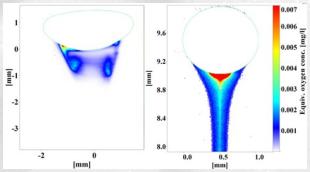




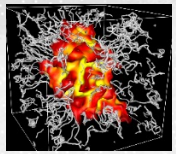
Contact : Prof. D. Thévenin

Reacting flows

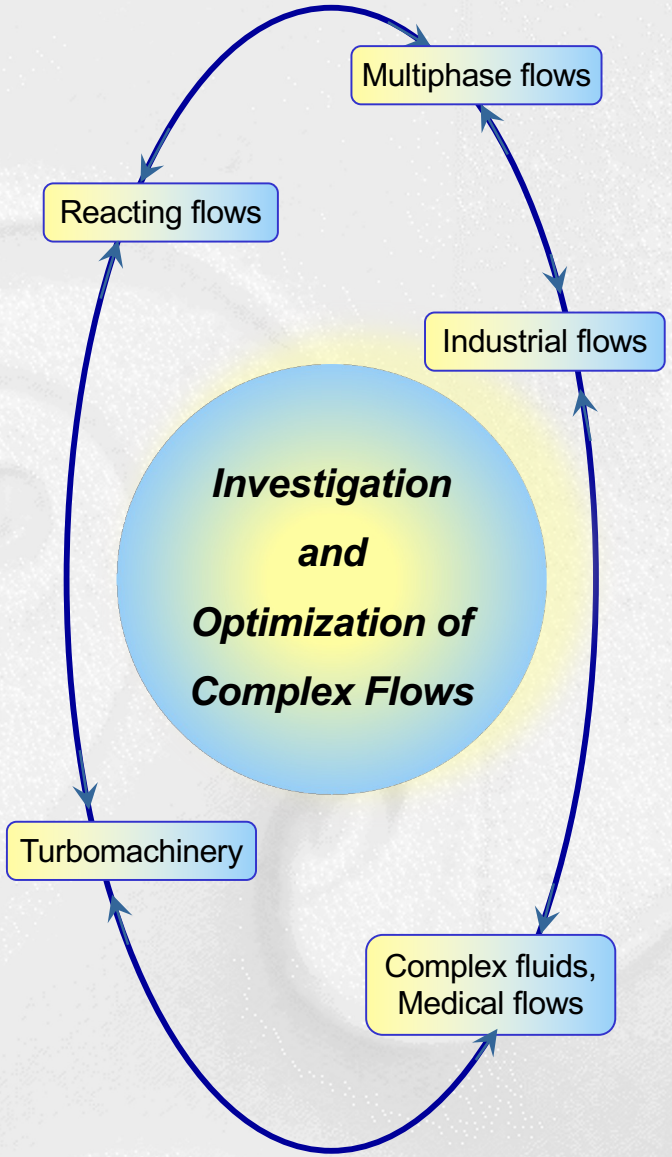
- Mixing processes with chemical reactions
- Two-phase mass transfer (gas-liquid)
- Simultaneous quantitative measurements (e.g. PIV-LIF)



- Investigation of flame/acoustic and flame/vortex interactions
- Development of numerical methods and codes: simulation of laminar and turbulent 3D- flows with detailed reaction schemes and transport models

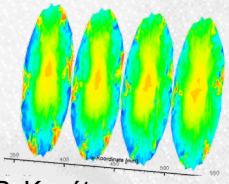


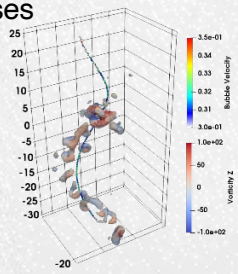
Contact : Dr. K. Zähringer



Multiphase flows

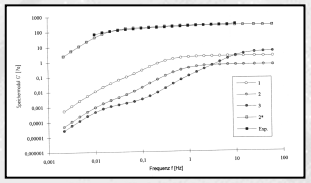
- Experimental investigations involving optical methods (PDA, Shadowgraphy, PIV-LIF, PTV)
- Numerical prediction of Particle Size Distributions (moment methods)
- Experimental and numerical investigation of two-phase flows with particles, droplets, bubbles
- Mixing and separation processes
- Bubble columns
- Film flows

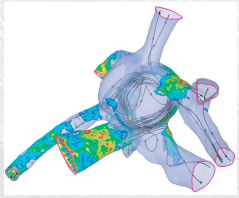




Contact : Dr. P. Kováts

Complex fluids & Medical flows





- Blood flows/medical applications, hemolysis, thrombosis, blood pumps
- Rheological investigation of the properties of suspensions
- Rheological description of now-newtonian fluids
- Drag reduction in suspensions

Contact : Prof. G. Janiga