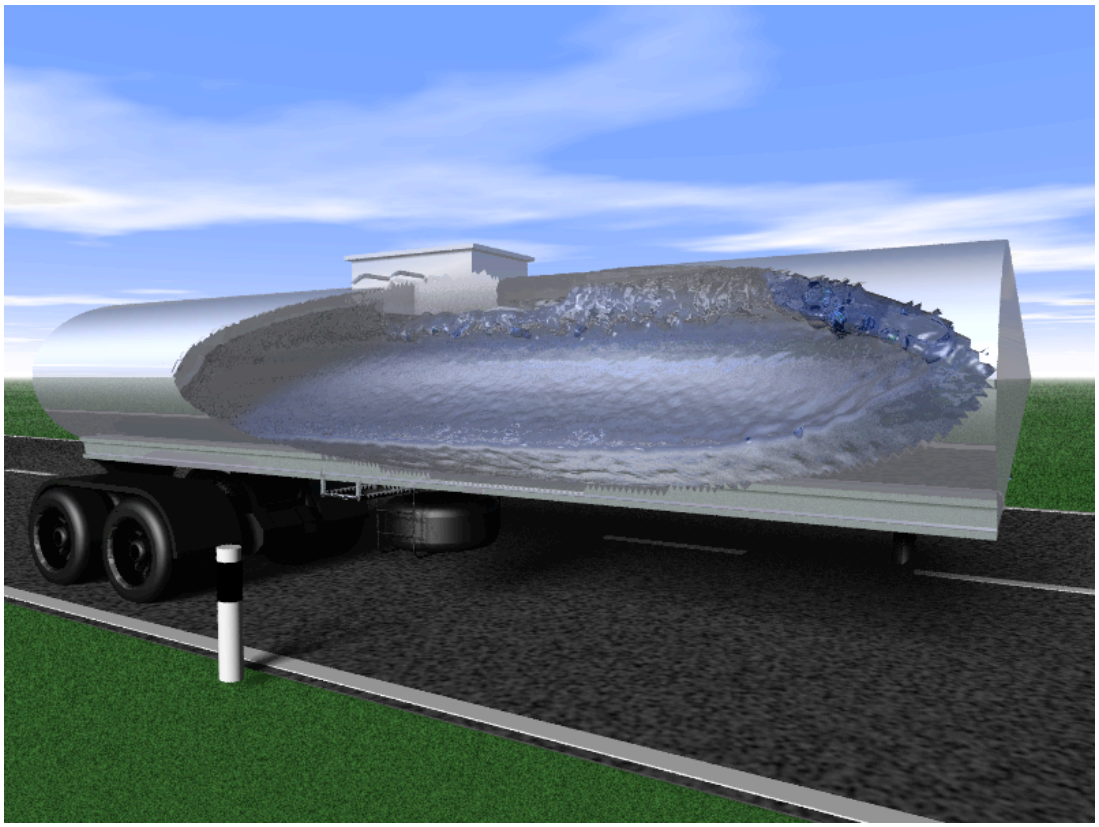
# MSS-Seminar

Wednesday, January 26th, 15:30, Nägelsbachstr. 49b

## Smoothed Particle Hydrodynamics and Acoustic Micromanipulation

**Philipp Hahn**
**Institut für mechanische Systeme / ETH Zürich**



Despite tremendous improvements on existing simulation methods, various fluid dynamic problems are still particularly challenging to model. Along with accuracy, robustness and flexibility the computational efficiency is an important measure for the assessment of simulation methods. While showing good performance on serial architectures many algorithms are not well suited for parallelization. Due to the rapidly increasing popularity of commodity parallel computing hardware the landscape of algorithms employed in numerical simulations is expected to change drastically.

The meshless simulation method Smoothed Particle Hydrodynamics (SPH) is brought back into focus since it is advantageous for certain classes of problems while being particularly well suited for massively parallel implementations. However, it is very important to be aware of some major shortcomings associated with this method.

In the second part of the talk I will briefly present the field of acoustic micro manipulation as an application that are still challenging to model.