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30/03/2016

EINLADUNG

zu einem Vortrag im Rahmen des

Kolloquiums Thermo- und Fluidodynamik

- Datum:** Mittwoch, 13. April 2016
- Zeit:** 16:15 Uhr
- Ort:** Maschinenlaboratorium ETH Zürich
Hörsaal ML H 44
- Referent:** Prof. Ivan Lunati
Institute of Earth Sciences
University of Lausanne, Switzerland
- Titel:** Pore-Scale Modeling and Reservoir Predictions: Objectives, Techniques and Results

Recent advances in high performance computing and imaging techniques have fostered pore-scale simulations of flow through porous media. We report on our experience in modeling multiphase flow with classic Computational Fluid Dynamics tools that couple the solution of the Navier-Stokes equations with the Volume of Fluid method to track the interface. With respect to other approaches, this technique offers the advantage that the model parameters are the physical parameters and that they are based on rigorous conservation principles. First, we validate the method by modeling microfluidic experiments in Hele-Shaw cells filled with obstacles, which have been built by soft lithography. Then, we illustrate how numerical simulations can be used to demystify the meaning of macroscopic quantities (e.g., capillary pressure) and to assess the importance of mechanisms, such as inertial effects during spontaneous meniscus reconfigurations. We discuss implication and opportunity of using these tools to improve reservoir-scale predictions.

Host: Prof. P. Jenny

Gäste sind willkommen!

Weitere Informationen: <http://www.ifd.mavt.ethz.ch/events/ktf/ktf-records.html>
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