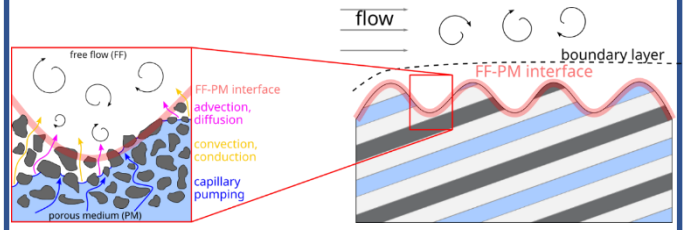
SFB1313

DFG Deutsche Forschungsgemeinschaft German Research Foundation

Coupled Free Flow - Porous Medium Systems



12th – 14th June
Stuttgart

Universität Stuttgart

12th June: Afternoon

13:30	Arrival
13:30 – 14:00	**Kick-off: Welcome** Rainer Helmig (University of Stuttgart)
14:00	**Session 1.1**
14:00	**Introductory remarks** Helge Dahle (University of Bergen)
14:10 – 14:40	*Robin-Robin partitioned methods for coupled free fluid and poroelastic flows* Ivan Yotov (University of Pittsburgh)
14:50 – 15:20	*Study of a passive flow control device in the framework of continuum mesoscopic one domain approach* Costanza Arico (University of Palermo)
15:30 – 16:00	**Coffee break**
16:00 – 16:30	*Coupling free and porous media flows at the pore and the REV scales - Ongoing work and open challenges* Martin Schneider (University of Stuttgart)
16:40 – 17:10	*Experimental validation of a dynamic pore-network model for spontaneous imbibition in sandstone rocks* Chaozhong Qin (Chongqing University)
17:30 – 18:00	**Walk to V7.01 for Maartje Boon's inaugural lecture**
18:00 – 19:00	*Subsurface Gas Storage in Porous Reservoirs: A Pathway to Sustainable Energy?* Maartje Boon (University of Stuttgart)
19:00	**Get together in PWR5a**

13th June: Morning

08:45	Arrival
09:00	**Session 2.1**
09:00	**Introductory remarks** Patrick Jenny (ETH Zürich)
09:10 – 09:40	*Modeling and analysis of local thermal non-equilibrium processes at the interface between free- and porous media flow* Anna Mareike Kostelecky (University of Stuttgart)
09:50 – 10:20	*Modelling and simulation of local thermal non-equilibrium on the REV scale* Ivar Stefansson (University of Bergen)
10:30 – 11:00	**Coffee break**
11:00 – 11:30	*The Role of Water Films in Controlling Mass and Heat Transfer in Porous Media and at Free Flow-Porous Media Interface* Bo Guo (University of Arizona)
11:40 – 12:10	*High-resolution PIV measurements of a porous model protruding into a turbulent free flow* Tobias Fuhrmann (University of Stuttgart)
12:10 – 13:30	**Lunch break**

13th June: Afternoon

13:30	**Session 2.2**
13:30	**Introductory remarks** Hans van Duijn (Eindhoven University of Technology)
13:40 – 14:10	*On the stability of density stratified flow below a ponded surface: linearized stability and variational approach* Hans van Duijn (Eindhoven University of Technology)
14:20 – 14:50	*Linear stability analysis of evaporation-induced density instabilities in porous media* Carina Bringedal (Western Norway University of Applied Sciences)
15:00 – 15:30	*Growth of immiscible viscous fingers in porous media: Transition from linearity to non-linearity* Santanu Sinha (Norwegian University of Science and Technology)
15:40 – 16:00	**Coffee break**
16:00 –	Poster session and discussions
	Get together

14th June: Morning

08:45	Arrival
09:00	**Session 3.1**
09:00	**Introductory remarks** Majid Hassanizadeh (University of Stuttgart)
09:10 – 09:40	*New insights into salt crystallization dynamics coupled with evaporative fluxes from porous media* Nima Shokri (Hamburg University of Technology)
09:50 – 10:20	*Bridging Scales in Salt Precipitation: From Pore Scale to REV Scale* Theresa Schollenberger and Stefanie Kiemle (University of Stuttgart)
10:20 – 10:50	**Coffee break**
10:50 – 11:20	*Evaporation experiments in a free flow-porous medium microfluidic cell* Nikolaos Karadimitriou (University of Stuttgart)
11:30 – 12:00	**Collaboration opportunities and closure remarks** Rainer Helmig (University of Stuttgart)
12:00 – 13:00	**Lunch break**
13:00	**Closure**

SFB 1313: is an interdisciplinary Collaborative Research Centre of the University of Stuttgart which aims to research the interfaces in multi-field processes (flow, transport and deformation) in porous-media systems and to gain a fundamental understanding how they affect multi-field processes.

Dates and locations:

Date: 12th to 14th June 2024

Location:
International meeting center (IBZ)
Univeristy of Stuttgart
Robert-Leicht-Straße 161
70569 Stuttgart
How to reach there:
https://www.beschaeftigte.uni-stuttgart.de/uni-services/infrastruktur/ibz/

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Poster Session

Kerem Bozkurt	*Experimental Investigation of Biofilm Growth and MICP in Porous Media*
Ali Chaudhry	*Non-invasive imaging of solute redistribution below evaporative surfaces using 23Na-MRI*
Edward Coltman	*Obstacles, Interfacial Forms and Turbulence: How Interfacial Heterogeneity Affects Coupled Free Flow - Porous Medium Systems*
Tufan Ghosh	*A phase-field formulation for modelling evaporation from porous media: Pore-scale simulation*
Bo Guo	*A Hybrid Pore-Network-Continuum Modeling Framework for Flow and Transport in 3D Digital Images of Porous Media*
Rebecca Kohlhaas	*Bayesian Comparison of Coupled Free Flow - Porous Medium Models*
Johannes Müller	*Direct numerical simulations of turbulent flows over liquid clusters within a porous medium*
Chaozhong Qin	*The Hybrid Modeling of Flow and Transport in Multiscale Digital Rocks*
Paula Strohbeck	*Efficient preconditioners for coupled fluid-porous systems*
Maziar Veyskarami	*Printing personalised medicines on demand*
Jonathan Wurst	*Simulation framework for capillary driven two-phase flow using PLIC-based contact line modelling*
Qingqi Zhao	*Inference of relative permeability curves in reservoir rocks with ensemble Kalman method*