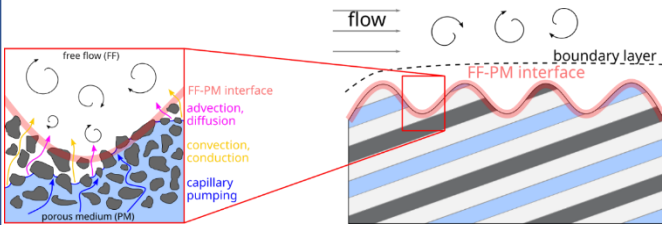




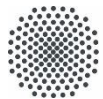
SFB1313

**DFG** Deutsche  
Forschungsgemeinschaft  
German Research Foundation

## Coupled Free Flow - Porous Medium Systems



12<sup>th</sup> – 14<sup>th</sup> June  
Stuttgart



Universität Stuttgart

## 12<sup>th</sup> June: Afternoon

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

## 13<sup>th</sup> June: Morning

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

## 13<sup>th</sup> June: Afternoon

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

## 14<sup>th</sup> June: Morning

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

**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:** 12<sup>th</sup> to 14<sup>th</sup> June 2024

**Location:**  
International meeting center (IBZ)  
University 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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Tel: +4971168560430

## Poster Session

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