

**SFB Status Seminar 2019**  
**Final Programme**  
**Room "Blautopf"**

**Wednesday, 20th March 2019**

Time	Speaker	Title of the Talk
09:15-09:30	Rainer Helmig (Stuttgart, Z)	<i>Opening</i>
09:30-09:45	Elissa Eggenweiler (Stuttgart) Johannes Eller (Stuttgart)	<i>Results of the Doctoral Workshop</i>
09:45-10:00	Patrizia Ambrisi (Stuttgart, Ö)	<i>Public Relations</i>
10:00-10:30	<i>Coffee Break</i>	
<b>10:30-12:00</b>	<b>Project Area A</b>	
10:30-10:45	Johannes Eller (A01)	Calculation of the pore size distribution using density functional theory
10:45-11:00	Johannes Müller (A02)	Pore scale simulations of turbulent flows in regular porous media with a low-Reynolds-number k-epsilon model
11:00-11:15	Kilian Weishaupt (A02)	Using a pore-network model to couple mass, momentum and energy at the interface between free flow and porous media flow
11:15-11:30	Elissa Eggenweiler (A03)	On the derivation of effective interface conditions for infiltration problems
11:30-11:45	Guang Yang (ehemals A02)	On the Beavers-Joseph interface condition for non-parallel coupled channel flow over a porous structure at high Reynolds numbers
11:45-14:00	<i>Lunch Break</i>	
<b>14:00-15:15</b>	<b>Selected Contributions</b>	
14:00-14:15	Gilian Schout (Utrecht)	3D modelling of subsurface methane leakage through unconsolidated sedimentary aquifers; implications for environmental monitoring
14:15-14:30	Xu Chu (Stuttgart)	Porous media involved turbulent flows
14:30-14:45	Stephan Lunowa (Hasselt)	Linearization and Domain Decomposition Methods for Non-Equilibrium Two-Phase Flow in Porous Media
14:45-15:00	Manuela Bastidas (Hasselt)	Numerical homogenization using adaptive grids and linearization schemes
15:00-15:45	<i>Coffee Break</i>	
<b>15:45-17:00</b>	<b>Project Area B</b>	
15:45-16:00	Daniel Kienle (B01)	Modeling of hydraulically induced fractures in elastic-plastic solids
16:00-16:15	Alixia Sonntag (B02)	Towards a continuum-mechanical model of fluid-driven fracture for fully and partially saturated porous media
16:15-16:30	Samuel Burbulla (B03)	From static fracture modelling to dynamically fracturing porous media
16:30-16:45	Sebastian Reuschen (B04)	MCMC for Bayesian inversion of high-dimensional, irregular problems
16:45-17:00	Nikos Karadimitriou (B05)	Imaging of fractures and precipitation in porous media
<b>17:00-18:00</b>	<b>Meeting of the General Assembly</b>	
18:00-20:00	<i>Dinner</i>	

**Thursday, 21st March 2019**

Time	Speaker	Title of the Talk
07:00-08:30	<i>Breakfast</i>	
<b>09:00-10:15</b>	<b>Project Area D</b>	
09:00-09:15	Stefan Scheller (D01)	Expressive representation for multifield visualization
09:15-09:30	Alexander Jaust (D02)	Solver coupling with preCICE
09:30-09:45	Farid Mohammadi (D03)	Uncertainty-aware validation of computational models using an adaptive arbitrary polynomial chaos expansion
09:45-10:00	Matthijs de Winter (Utrecht)	Experimental observations of coupling of free flow and porous structures in a microfluidic setup
10:00-10:45	<i>Coffee Break</i>	
<b>10:45-12:00</b>	<b>Selected Contributions</b>	
10:45-11:00	Ludovica Delpopolo (Delft/Milano)	Conservative multirate multiscale simulation of multiphase flow in heterogeneous porous media
11:00-11:15	Enno de Vries (Utrecht)	Microfluidics design and experiments: computer generated and x-ray derived micromodels
11:15-11:30	Quang Huy Tran (IFPen)	Design of finite volume schemes minimizing the grid orientation effect in reservoir simulation
11:30-11:45	Tufan Gosh (Kharagpur)	A note on Mellin-Fourier integral transforms technique to solve Stokes' problems for simultaneous flow through both a pure fluid and a porous medium
11:45-12:00	Mousa HosseiniMehr (Delft)	Algebraic Dynamic Multilevel (ADM) Method for fractured geothermal reservoir simulation
12:00-14:15	<i>Lunch Break</i>	
<b>14:15-15:30</b>	<b>Project Area C</b>	
14:15-14:30	Kartik Jain (C01)	Bacterial transport in porous media
14:30-14:45	Lars von Wolff (C02)	Phase Field Models for Multi-phase Pore-scale Processes with Microstructural Evolution
14:45-15:00	Zubin Trivedi (C03)	Numerical and theoretical investigations of fluid flow in porous media with regular microstructures
15:00-15:15	Holger Class (C04)	Experimental investigations of calcite precipitation in microfluidic models
15:15-15:30	Joseph Piotrowski (C05)	Experimental investigations of the effect of salt precipitation on evaporation
15:30-16:00	<i>Coffee Break</i>	
<b>16:00-17:00</b>	<b>Cross-Cutting Themes</b>	
16:00-16:30	David Martínez-Hernández	Experimental investigation of crossflow interactions of porous media: actual status
16:30-17:00	Martin Schneider	Software and data
<b>17:00-18:00</b>	<b>Meeting of Task Forces "Experiments", "Software and data", "Mathematical and computational models"</b>	
18:00-20:00	<i>Dinner</i>	
<b>20:00-21:00</b>	<b>Meeting of the Advisory Board</b>	

**Friday, 22nd March 2019**

Time	Speaker	Title of the Talk
07:00-08:30	<i>Breakfast</i>	
<b>09:00-10:00</b>	<b>Parallel Meetings of Project Areas A, B, C, and D</b>	
10:00-10:30	<i>Coffee Break</i>	
<b>10:30-12:00</b>	<b>Introduction of new Projects</b>	
10:30-11:00	Dominik Göddeke	Iterative Solvers for ill-conditioned nonsymmetric monolithic systems
11:00-11:30	Wietse Boon	Parameter-robust iterative methods for coupled Stokes-Darcy problems
11:30-12:00	Carina Bringedal	Pore scale formulations for evaporation, and upscaling to REV scale
<b>12:00-12:05</b>	Rainer Helmig	<i>Closing</i>
12:00-13:00	<i>Lunch</i>	
13:00	<i>Departure</i>	