

International Workshop „Coupled Models in Energy, Hydrological and Climate Research“, Berlin, October 8 – 9, 2009

Thursday, October 8, 2009	
08.00 – 08.50	Registration
08.50 – 09.00	Opening
09.00 – 09.45	<i>Plenary Speakers</i> A. Mikelic (Université Lyon 1, France) Modeling effective interface laws for transport phenomena between an unconfined fluid and a porous medium using homogenization
09.45 – 10:30	B. Straughan (University of Durham, UK) Flow of a fluid over a porous medium; hydrodynamic stability questions
10.30 – 11:00	Coffee break
11.00 – 11:25	<i>Contributed Talks</i> E. Creuse (Université Lille 1, France) Hybrid FV/FE methods for variable-density viscous incompressible flows
11:25 – 11:50	A. Linke (WIAS Berlin, Germany) The discretization of coupled flows and the problem of mass conservation
11.50 – 12.15	D. Sternel (TU Darmstadt, Germany) Coupling of acoustics and structure movement to a finite volume flow solver
12.15 – 12.40	J. Fuhrmann (WIAS Berlin, Germany) A model of a flow cell with porous electrode
12.40 – 14.15	Lunch
14.15 – 15.00	<i>Plenary Speaker</i> Ph. Angot (Université de Provence, France) On the well-posed coupling between free fluid and porous flows
15.00 – 15.25	<i>Contributed Talks</i> K. Mosthaf (Universität Stuttgart, Germany) A new coupling concept for multi-phase multi-component porous media and free flow
15.25 – 15.50	H. Berninger (FU Berlin, Germany) Coupling of Richards' equation and surface water models
15.50 – 16.20	Coffee break
16.20 – 16.55	Ch. Engwer (Universität Heidelberg, Germany) A generic parallel software approach to domain coupling
16.55 – 17.20	M. Mehl (TU München, Germany) Octree based coupling and geometry representation for multi-scale porous media applications
17.20 – 17.45	A. Taakili (INRIA, France) Linear and nonlinear preconditioning for reactive transport with sorption
19.00	Conference Dinner

Friday, October 9, 2009

09.00 – 09.45	<i>Plenary Speakers</i> P. Sochala (BRGM, France) Numerical methods for subsurface flows and coupling with surface runoff
09.45 – 10.30	H. Class (Universität Stuttgart, Germany) Coupled models for approaching the large scales in simulating CO₂ storage in geological formations
10.30 – 11.00	Coffee break
11.00 – 11.25	<i>Contributed Talks</i> J. B. Bell (Berkeley, USA) High-resolution adaptive algorithms for subsurface flow
11.25 – 11.50	R. Klein (FU Berlin, Germany) Ekman boundary layers over rough surfaces: Flow structure and uncertainty estimation
11.50 – 12.15	M. Cai (TU Dortmund, Germany) Decoupled algorithms for the coupled surface/subsurface flow interaction problems
12.15 – 12.40	R. Forster (FU Berlin, Germany) The stochastic Richards equation
12.40 – 14.20	Lunch
14.20 – 14.45	M. Hokr (TU Liberec, Czechia) Variable-density flow in combined continuum and discrete fracture network — Numerical scheme and computational examples
14.45 – 15.10	E. Holzbecher (Universität Göttingen, Germany) Numerical experiments on a coupled flow and transport benchmark — Primitive variable vs. streamfunction formulation, the Oberbeck-Boussinesq assumption and Picard vs. Newton iterations
15.10 – 15.35	J. Könnö (TU Helsinki, Finland) Enforcing general boundary conditions for Darcy's equation
15.35 – 16.00	R. Stenberg (TU Helsinki, Finland) Analysis of finite element methods for the Brinkman problem
16.00 – 16.30	Coffee break
16.30 – 16.55	W. Sun (City University, Hong Kong) Mathematical Modeling, computation and analysis for heat and moisture transport in porous textile materials
16.55 – 17.20	J. C. de los Reyes (TU Berlin, Germany) Numerical simulation of viscoplastic fluid flow by semismooth Newton methods
17.20	End of the workshop