

## Final Program

Sunday, 24.06.12

18:00-20:00 Icebreaker, Lobby Hotel Watthalden

Monday, 25.06.12

9:30-10:00 Opening Session, Watt & Ohm conference room, Buhlsche Mühle

### 1. Identification (Chair: P. B. Nair), Watt & Ohm conference room, Buhlsche Mühle

10:00-10:30 H. G. Matthies, B. Rosić, O. Pajonk, A. Kučerová, J. Sýkora: Bayesian Identification of Parameters Describing Nonlinear Models of Heterogeneous Media

10:30 -11:00 Coffee Break

11:00-11:30 K. Sepahvand, S. Marburg: On Construction of Uncertain Material Parameters Using Generalized Polynomial Chaos Expansion from Experimental Data

11:30-12:00 N. Lingala, N. Sri Namachchivaya, N. Perkowski, H. C. Yeong: Multiscale Dynamics and Information in Data Collection and Assimilation for Complex Systems

12:00-14:00 Lunch Break

### 2. Stochastic Multiscale Methods in Continuum Mechanics (Chair: J.-M. Bourinet), Watt & Ohm conference room, Buhlsche Mühle

14:00-14:30 M. Ostoja-Starzewski: From Random Fields to Classical or Generalized Continuum Models

14:30-15:00 R. Cottreau, D. Clouteau, H. Ben Dhia, C. Zaccardi: A Stochastic Deterministic Coupling Method for Multiscale Problems. Application to Numerical Homogenization of Random Materials

15:00-15:30 P. B. Nair, C. Audouze: Projection Schemes for High-Dimensional Stochastic Problems

15:30-16:00 Coffee Break

16:00-16:30 J. Guillemint, C. Soize: Prior Representations of Random Fields for Stochastic Multiscale Modeling

16:30-17:00 M. Di Paola, M. Zingales: The Multiscale Stochastic Model of Fractional Hereditary Materials

17:00-17:30 V. V. Malanin, I. E. Poloskov: On some Methods for Study of Stochastic Hereditary Systems

Tuesday, 26.06.12

**3. Stochastic Multiscale Modelling for Heterogeneous Materials (Chair: L. Graham-Brady), Watt & Ohm conference room, Buhlsche Mühle**

9:00-9:30 G. Muscolino, A. Sofi, M. Zingales: Long-Range Interactions of 1D Heterogeneous Solids with Uncertainty: Interval Versus Stochastic Analysis

9:30-10:00 M. Vasta, A. Pandolfi, A. Gizzi: A Fiber Distributed Model of Biological Tissues

10:00-10:30 C. Proppe: Stochastic Multiscale Modelling of Metal Foams

10:30 -11:00 Coffee Break

11:00-11:30 E. Savin: Kinetic Modeling for Anisotropic Transport of Elastic Waves in Random Media

11:30-12:00 S. Adhikari: A stochastic multiscale approach for mid-frequency vibration problem

12:00-14:00 Lunch Break

**4. Stochastic Multiscale Modelling for Damage and Fracture (Chair: M. Ostoja-Starzewski), Watt & Ohm conference room, Buhlsche Mühle**

14:00-14:30 L. Graham-Brady: Upscaling Crack Propagation and Random Interactions in Brittle Materials under Dynamic Loading

14:30-15:00 A. Yin, X. Yang, Z. Yang: 2D and 3D Fracture Modelling of Asphalt Mixture with Randomly Distributed Aggregates and Embedded Cohesive Cracks

15:00-15:30 J.-M. Bourinet, C. Mattrand: Damage Tolerance and Reliability Assessment under Random Markovian Loads

15:30-16:00 Coffee Break

Wednesday, 27.06.12

**5. Multiscale Modelling in Stochastic Dynamics and Control (Chair: W. V. Wedig), Watt & Ohm conference room, Buhlsche Mühle**

9:00-9:30 L. Dostal, E. Kreuzer, N. Sri Namachchivaya: Stochastic Averaging of Coupled Roll-Pitch and Roll-Heave Motion in Random Seas

9:30-10:00 G. K. Er: The Probabilistic Solutions of Some Nonlinear Stretched Beams Excited by Filtered White Noise

10:00-10:30 J. Li, X. Ren: Density Based Modeling of Stochastic Damage Evolution

10:30 -11:00 Coffee Break

11:00-11:30 F. Colonus: Supports of Conditionally Stationary Measures for Random Diffeomorphisms

11:30-12:00 D. A. Yurchenko, P. Alevras: Stochastic Dynamics of a Parametrically Excited Rotating Pendulum

12:00-14:00 Lunch Break

14:00 Excursion to Heidelberg and Symposium Dinner

Thursday, 28.06.12

**6. Stability Problems in Multiscale Stochastic Dynamics (Chair: N. Sri Namachchivaya), Watt & Ohm conference room, Buhlsche Mühle**

9:00-9:30 W. V. Wedig: Bifurcation and Stability in Multi-Scaled Stochastic Mechanics

9:30-10:00 V. Wihstutz: Noise Induced Resonance versus Rotation and Mixing of Modes. A Survey.

10:00-10:30 W. Kliemann: Stability Radii via Lyapunov Exponents for Large Stochastic Systems

10:30 -11:00 Coffee Break

11:00-11:30 E. Seroka, L. Socha: Mean-Square Stability of Two -Time Scale Linear Stochastic Hybrid Systems

11:30-12:00 M. Högele, I. Pavlyukevich: Planar Dynamical Systems Perturbed by Heavy-Tailed Lévy Noise

12:00-12:30 Closing Session

12:30-14:00 Lunch Break

14:00-17:00 Technical Tour to KIT Labs and Facilities