

Tentative Program Numerical Modeling of Complex Dynamical Systems

Tuesday, May 6

08:30	Arrival at the Lorentz Center and registration
08:55	Introduction - Mrs. M. Kruk – de Bruin , manager LC
09:00 – 09:35	Bill Gear : Computing on slow virtual manifolds
09:40 – 10:15	Antonios Zagaris : Numerical modeling via dimension reduction
10:15 – 10:45	Coffee
10:45 – 11:20	Giovanni Samaey : Numerical simulation of the macroscopic behaviour of multiscale systems: patch dynamics
11:25 – 12:00	Dirk Roose : Initialization of microscopic evolution models in the context of (equation-free) multiscale simulations
12:00 – 13:00	Lunch
13:00 – 14:00	Poster session
14:00 – 15:45	Open discussion/collaboration
15:45 – 16:20	Uri Ascher : Strange computations
16:20 – 16:55	Jens Lang : On global error control
16:55 – 17:30	Marc Spijker : Monotonicity of multistep Runge-Kutta methods
17:30 – 19:00	Wine & cheese

Wednesday, May 7

09:00 – 09:35	Andrew Stuart : Data assimilation: inverse problems in dynamical systems
09:40 – 10:15	Marlis Hochbruck : Numerical simulation of relativistic laser-plasma interaction
10:15 – 10:45	Coffee
10:45 – 11:20	Kevin Burrage : Stochastic multiscale modeling in computational cell biology
11:25 – 12:00	J.M. Sanz-Serna : Numerical methods for fast oscillations
12:00 – 14:00	Lunch, open discussion/collaboration
14:00 – 14:35	Karel In 't Hout : ADI finite difference schemes for option pricing in the Heston model with correlation
14:40 – 15:15	Stephan Vandewalle : Multigrid methods for stationary and time-dependent partial differential equations with stochastic coefficients
15:20 – 15:55	Mari Paz Calvo : A representation theorem for the convolution quadrature method based on BDF2
16:00	Departure for boat trip and conference dinner on board

Thursday, May 8

- 09:00 – 09:35 **Eric Vanden-Eijnden:** Multiscale integrators for stochastic systems
- 09:40 – 10:15 **Stephen Bond:** Backward error analysis for microcanonical molecular dynamics
- 10:15 – 10:45 Coffee
- 10:45 – 11:20 **Bob Skeel:** Long-time behavior of chaotic Hamiltonian systems
- 11:25 – 12:00 **Ben Leimkuhler:** a mellow ergodic thermostat for molecular dynamics
- 12:00 – 16:00 Lunch, open discussion/collaboration
- 16:00 – 16:35 **Severiano Gonzalez-Pinto:** An iterated Radau method for time-dependent PDEs
- 16:40 – 17:15 **Stephane Descombes:** On the local behaviour of splitting methods for stiff reaction-diffusion equations
- 17:20 – 17:55 **Alexander Ostermann:** Operator splitting for evolution equations

Friday, May 9

- 09:00 – 09:35 **Sebastian Reich:** Regularized fluid equations and particle methods for long time simulations
- 09:40 – 10:15 **Assyr Abdulle:** On stabilized methods and multiscale stochastic systems
- 10:15 – 10:45 Coffee
- 10:45 – 11:20 **Daan Crommelin:** Stochastic parameterization of unresolved scales in atmosphere models
- 11:25 – 12:00 **Colin Cotter:** Variational particle-mesh methods for fluid dynamics and shape matching
- 12:00 – 13:00 Lunch
- 13:00 – 13:35 **Reinout Quispel:** Energy-preserving Integrators I
- 13:40 – 14:15 **Brynjulf Owren:** Energy-preserving Integrators II
- 14:20 – 14:55 **Ernst Hairer:** Analysis of numerical energy conservation
- 15:00 – 17:00 Open discussion, collaboration, closing