Ki-Net Workshop:

Uncertainty quantification in kinetic and hyperbolic problems

Van Vleck Hall, Department of Mathematics, University of Wisconsin-Madison

March 28-31, 2015

website: http://www.ki-net.umd.edu/content/conf?event_id=242

Registration and coffee breaks: Van Vleck Hall room 911

Lectures: Van Vleck Hall room B130

Conference Schedule

Saturday, March 28

8:00-- Registration

8:45-9:00 Opening remarks (Shi Jin and Eitan Tadmor)

Chair: Shi Jin

9:00-9:45 Tom Hou, Caltech
Intrinsic sparse mode decomposition of high dimensional random fields with application to stochastic elliptic PDEs

9:50-10:35 Bruno Despres, University of Paris VI
Uncertainty propagation with intrusive kinetic methods for conservation laws

10:35-11:05 Coffee Break

11:10-11:55 Jian-Guo Liu, Duke University
Stability of micro-macro decomposition based stochastic Galerkin method for linear transport equation with random imputs and diffusive scalings

12:00-2:00 Lunch

Chair: Eitan Tadmor

2:00-2:45 Chi-Wang Shu, Brown University
High order DG and WENO methods for correlated random walk with density-dependent turning rates

2:50-3:35 Cory Hauck, Oak Ridge National Lab
Two-level sampling strategies for hyperbolic relaxation laws

3:40-4:10 Coffee break

4:15-5:00 Mohammad Motamed, New Mexico State University
Uncertainty quantification for high frequency waves

Sunday, March 29

Chair: Tom Hou

9:00-9:45 Eitan Tadmor, University of Maryland, College Park
Entropy stability and TeCNO computation of entropy measure-valued solutions

9:50-10:35 Christoph Schwab, ETH
Multilevel Monte-Carlo FV and FT Methods for hyperbolic PDEs with random input data

10:35-11:05 Coffee Break

11:10-11:55 Siddhartha Mishra, ETH
UQ for hyperbolic conservation laws within the framework of measure valued solutions

12:00-2:00 Lunch

Chair: Chi-Wang Shu

2:00-2:45 Dongbin Xiu, University of Utah
Local polynomial chaos expansion for high dimensional stochastic PDE

2:50-3:35 Heyrim Cho, Brown University
Uncertainty Quantification based on the joint response-excitation probability density and its application to stochastic Burgers equation

3:40-4:10 Coffee break

4:15-5:00 Jingwei Hu, Purdue University
A stochastic Galerkin method for the nonlinear Boltzmann equation with uncertainty

6:00-8:00 **Conference banquet:** Soga Chinese Restaurant, 508 State Street

Monday, March 30

Chair: Sid Mishra

9:00-9:45 Max Gunzburger, Florida State University
Multilveve Monte Carlo and stochastic collocation methods
9:50-10:35 Tao Tang, Hong Kong Baptist University
Hermite spectral methods and discrete least square projection with random evaluations

10:35-11:05 Coffee Break

11:10-11:55 Richard Dwight, Delft University of Technology
Predictive turbulence closures with Bayesian model-scenario averaging

12:00-2:00 Lunch

Chair: Max Gunzburger

2:00-2:45 Tim Barth, NASA Ames
Combined uncertainty and a posteriori error bound estimates for general CFD calculations
2:50-3:35 Clayton Webster, Oak Ridge National Lab
Quasi-optimal methods for deterministic and stochastic parameterized PDEs

3:40-4:10 Coffee break

4:15-5:00 Themistoklis Sapsis, MIT
Quantification and prediction of rare events in water waves

Tuesday, March 31	free discussions in the morning