

Workshop on  
“Adaptivity, High Dimensionality and Randomness”

April 4 - 8, 2022

organized by

Carsten Carstensen (HU Berlin), Albert Cohen (Sorbonne U, Paris),  
Michael Feischl (TU Vienna), Christoph Schwab (ETH Zürich)

• **Monday, April 4th, 2022**

09:00 – 10:00 **Registration and Coffee**

10:00 – 10:15 **Welcome**

10:15 – 11:10 **Michael Griebel (INS, Bonn)**

*Sparse Tensor Product Approximation for a Class of Generalized Method of Moments Estimators*

11:10 – 12:00 **Ivan Oseledets (SKOLTECH Moscow)**- online

*Algorithms to approximate high-dimensional functions and probability distributions*

12:00 – 13:30 **Lunch Break**

13:30 – 14:20 **Chris Oates (U Newcastle upon Tyne)** - online

*Optimal Thinning of MCMC Output*

14:20 – 15:10 **Olga Mula Hernandez (Dauphine U, Paris)** - online

*Sparse, Adaptive Interpolation of Measures with Wasserstein Barycenters. Application to Model Order Reduction.*

15:10 – 15:40 **Coffee Break**

15:40 – 16:30 **Aretha Teckentrup (U Edinburgh)** - online

*Convergence and Robustness of Gaussian Process Regression*

• **Tuesday, April 5th, 2022**

09:00 – 09:50 **Wolfgang Dahmen (U of South Carolina, Columbia)** - online

*Some Thoughts on PINN - Prediction Capability*

09:50 – 10:20 **Coffee Break**

10:20 – 11:10 **Giovanni Migliorati (Sorbonne U, Paris)** - online

*Adaptive approximation by weighted least-squares methods*

11:10 – 12:00 **TBA TBA**

12:00 – 13:30 **Lunch Break**

13:30 – 14:20 **Bruno Després (Sorbonne U, Paris)**

*A non probabilistic proof of the efficiency of the Latin hypercube method*

14:20 – 15:10 **Reinhold Schneider (TU Berlin)** - online

*Numerical solution of Hamilton Jacobi Bellmann (HJB) equations from a Mean Field Game Perspective*

15:10 – 15:40 **Coffee Break**

15:40 – 16:30 **Houman Owhadi (Caltech, Pasadena)** - online  
*Solving/learning nonlinear PDEs and completing computational graphs with GPs*

- **Wednesday, April 6th, 2022**

09:00 – 09:50 **Rob Stevenson (U Amsterdam)**  
*First order least squares methods for parabolic and instationary Stokes equations*

09:50 – 10:20 **Coffee Break**

10:20 – 11:10 **Tabea Tscherpel (U of Bielefeld)**  
*Interpolation operators on negative Sobolev spaces*

11:10 – 12:00 **Markus Faustmann (TU Wien)**  
*Adaptive FEM for fractional diffusion*

12:00 – 13:30 **Lunch Break**

13:30 – 14:20 **Martin Eigel (WIAS, Berlin)**  
*An empirical adaptive Galerkin method for parametric PDEs*

14:20 – 15:10 **Christian Kreuzer (TU Dortmund)**  
*On the Threshold Condition for Dörfler Marking*

15:10 – 15:40 **Coffee Break**

15:40 – 16:30 **Ricardo Nochetto (U of Maryland)** - online  
*Adaptive Virtual Element Methods,*

- **Thursday, April 7th, 2022**

09:00 – 09:50 **Catherine Powell (U Manchester)** - online  
*Multilevel Adaptive Stochastic Galerkin Approximation*

09:50 – 10:20 **Coffee Break**

10:20 – 11:10 **Michele Ruggeri (U Strathclyde, Glasgow)**  
*Adaptivity for multilevel stochastic Galerkin finite element method*

11:10 – 12:00 **Barbara Verfürth (KIT, Karlsruhe)** - online  
*Offline-online strategy for multiscale problems with random defects*

12:15 – 13:30 **Lunch Break**

13:30 – 14:20 **Markus Bachmayr (U Mainz)**  
*Optimality of adaptive stochastic Galerkin methods for affine-parametric elliptic PDEs*

14:20 – 15:10 **Alex Bespalov (U of Birmingham)**  
*A posteriori error estimation and adaptivity for stochastic collocation FEM*

15:10 – 15:40 **Coffee Break**

15:40 – 16:30 **Elisabeth Ullmann (TU Munich)**  
*Rare event estimation with PDE-based models*

- **Friday, April 8th, 2022**

09:00 – 09:50 **Friedrich Pillichshammer (JKU, Linz)**

*Tractability of approximation in the weighted Korobov space in the worst-case setting*

09:50 – 10:20 **Coffee Break**

10:20 – 11:10 **Peter Kritzer (RICAM, Linz)**

*Digit-by-digit constructions of good lattice rules*

11:10 – 12:00 **Fabio Nobile (EPF Lausanne)**

*Density estimation in RKHS with application to Korobov spaces in high dimensions*

12:00 – 12:15 **Closing**

**The event takes place at the Erwin Schrödinger Institute - Boltzmann lecture hall! Online participation is possible via zoom. Zoom coordinates are available on request ([secr@esi.ac.at](mailto:secr@esi.ac.at)) and after registration until April 1, 2022.**