

Speakers

- **Prof. Yalchin Efendiev, PhD**
Texas A&M University (TAMU), College Station,
USA
- **Prof. Robert Scheichl, PhD**
University of Bath, GBR
- **Prof. Ivan Oseledets, PhD**
Skolkovo Institute of Science and Technology,
Moscow, RUS

Chairs

- **Prof. Dr. Oleg Iliev**
Fraunhofer ITWM
- **Prof. Dr. Karl-Heinz Küfer**
Fraunhofer ITWM

Venue

Auditorium at Fraunhofer Institute for Industrial
Mathematics ITWM

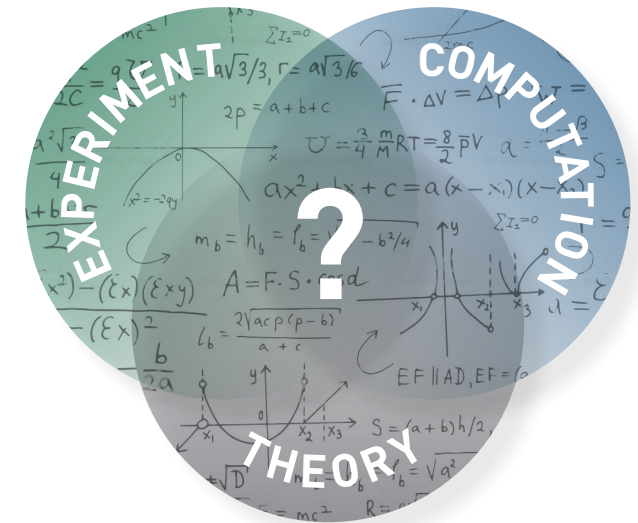
Fraunhofer-Platz 1
67663 Kaiserslautern

Participation

Everybody interested in the subjects is cordially
invited to the lectures. Registration is not required.
Admission free.

Contact

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Felix Klein Academy
International Autumn Workshop

Uncertainty Quantification

September 26th – 28th, 2018

Fraunhofer Institute for Industrial Mathematics ITWM
Fraunhofer-Platz 1, Kaiserslautern



Dear colleagues and students,

Many industrial, environmental and biomedical problems, such as oil recovery, weather forecast, drug delivery, to name just a few, have to be investigated in the presence of various uncertainties.

Multilevel Monte Carlo Methods, Markov Chain Monte Carlo Methods, as well as tensor decomposition and deep learning methods for multivariate function approximation, are among the most advanced and efficient methods for Uncertainty Quantification. Introduction to these methods, their advanced analysis, as well as applications to multiscale problems, data assimilation, etc. will be presented by internationally recognized leading scientists in the field.

The objective of the Felix Klein Academy autumn workshop is to stimulate research and to discuss applications in the Kaiserslautern mathematics family consisting of the University's Math Department and the Fraunhofer Institute for Industrial Mathematics. There will be enough space for discussions and for sharing problems in the specified domain.



O. Iliev



K.-H. Küfer

Wednesday, September 26th

- 8:45 Opening Words by Oleg Iliev and Karl-Heinz Küfer
- 9:00 **Rien ne va plus: Multilevel Monte Carlo Methods, Part I**, Robert Scheichl
- 9:45 **Rien ne va plus: Multilevel Monte Carlo Methods, Part II**, Robert Scheichl
- 10:30 Coffee break
- 11:00 **Multivariate Function Approximation Methods and Tools**, Ivan Oseledets
- 11:45 Lunch
- 13:45 Social event (only with personal invitation)

public lectures

Thursday, September 27th

- 9:00 **Multiscale and Upscaling Methods for Deterministic and Stochastic Problems, Part I**, Yalchin Efendiev
- 9:45 **Multiscale and Upscaling Methods for Deterministic and Stochastic Problems, Part II**, Yalchin Efendiev
- 10:30 Coffee break
- 11:00 **Rien ne va plus: Multilevel Monte Carlo Methods, Part III**, Robert Scheichl
- 11:45 Lunch

public lectures

Friday, September 28th

- 9:00 **Multivariate Function Approximation Methods and Tools (Tensor Decompositions)**, Ivan Oseledets
- 9:45 **Multivariate Function Approximation Methods and Tools (Deep Learning Methods)**, Ivan Oseledets
- 10:30 Coffee break
- 11:00 **Data Integration in Multiscale Methods**, Yalchin Efendiev
- 11:45 Lunch

public lectures