Invited Speakers

- **Thomas Erlebach**
  Department of Informatics, University of Leicester, UK

- **Madhav Marathe**
  Network Dynamics and Simulation Science Laboratory (NDSSL), Biocomplexity Institute, Virginia Tech, USA

- **Aravind Srinivasan**
  Department of Computer Science, University of Maryland, USA

- **Caren Tischendorf**
  Institute of Mathematics, Humboldt University of Berlin

Chairs

- **Sven Krumke**
  TU Kaiserslautern

- **Karl-Heinz Küfer**
  Fraunhofer ITWM

- **Helmut Neunzert**
  Fraunhofer ITWM

Venue

Auditorium at Fraunhofer Institute for Industrial Mathematics ITWM

Fraunhofer-Platz 1
67663 Kaiserslautern

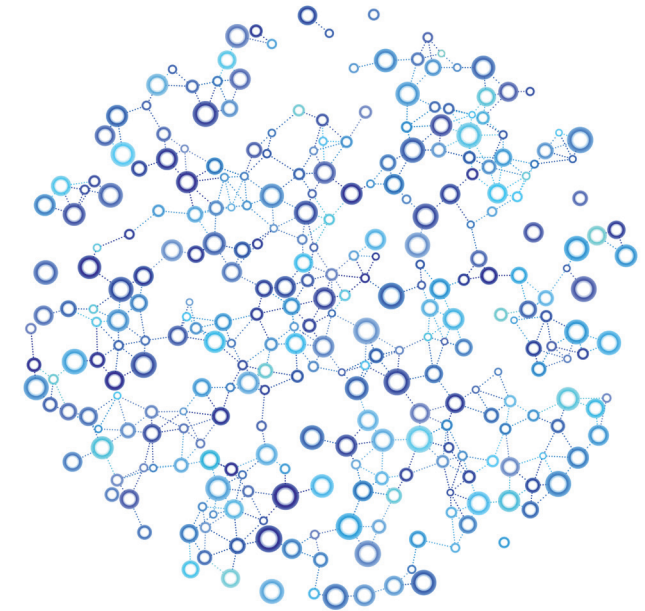### Participation

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

Participation of the closed sessions by personal invitation only.

Contact

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Felix Klein Academy
International Autumn Workshop

Networks and Uncertainty

September 27th – 29th, 2017
Fraunhofer Institute for Industrial Mathematics ITWM
Fraunhofer-Platz 1, Kaiserslautern

FELIX KLEIN
ZENTRUM FÜR
MATHEMATIK

Dear colleagues and students,

Networks are one of the most relevant structures in mathematical modelling: e.g. supply chains, production systems, social systems, the internet or traffic flows are important applications.

Network analysis, simulation and optimization, whether assuming flux in equilibrium or dynamic, sources and demands deterministic or at random, is a broad and vivid research field of many mathematicians. Four experts from the United States, England and Germany will provide survey talks and current research topics around networks with particular emphasis on how to cope with uncertainty.

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.

S. Krumke   K.-H. Küfer   H. Neunzert

Wednesday, September 27th	
8:30	Opening Words by Sven Krumke, Karl-Heinz Küfer and Helmut Neunzert
9:00	**Queryable Uncertainty,** Thomas Erlebach
9:45	**Scheduling Uncertain Jobs with Testing,** Thomas Erlebach
10:30	Coffee break
11:00	**Basic Models and Algorithms in Stochastic Optimization,** Aravind Srinivasan
11:45	**Algorithms in Online Advertising,** Aravind Srinivasan
12:30	Lunch
13:30	Social event (only with personal invitation)

public lectures

Thursday, September 28th	
9:00	**Network graph describing matrices and their properties,** Caren Tischendorf
9:45	**Modeling of flow networks with differential (algebraic) equations,** Caren Tischendorf
10:30	Coffee break
11:00	**Computational Network Science and Socially coupled systems,** Madhav Marathe
11:45	**Graphical Dynamical Systems and Interaction-Based Computing,** Madhav Marathe
12:30	Lunch
14:30	**Closed invited sessions**

public lectures

Friday, September 29th	
9:00	**Exploration of Temporal Graphs,** Thomas Erlebach
9:45	**Uncertainty modeling for networks,** Caren Tischendorf
10:30	Coffee break
11:00	**Algorithms for Stochastic Packing Problems,** Aravind Srinivasan
11:45	**Simulation, Optimization and control of contagions in co-evolving networks,** Madhav Marathe
12:30	Lunch

public lectures