

## Zuse Institute Berlin (ZIB)

The conference “Mathematics of Gas Transport” will be held at the Zuse Institute Berlin (ZIB). ZIB is an interdisciplinary research institute for applied mathematics and data-intensive high-performance computing. Its research focuses on modeling, simulation and optimization with scientific cooperation partners from academia and industry.

Takustraße 7  
14195 Berlin  
Germany



This conference is sponsored by:



# Program



Mathematics of Gas Transport  
October 6–7, 2016  
Zuse Institute Berlin

## October 6 Scientific Day

- 08:30 h **Registration**
- 09:00 h **Sven Leyffer** (Argonne National Laboratory, Chicago)  
*Mixed-Integer PDE Constrained Optimization*
- 09:45 h **Martin Groß** (TU Berlin)  
*Potential-Based Flows for Gas Networks:  
Easy and Hard Cases*
- 10:10 h **Thomas Kugler** (TU Darmstadt)  
*Structure Preserving Model Order Reduction  
for Damped Wave Propagation on Networks*
- 10:35 h **Coffee Break**
- 10:55 h **Anatoly Zlotnik** (Los Alamos National Laboratory)  
*Optimal Control of Physical and Market Operations  
for Gas Pipeline Networks*
- 11:20 h **Fabian Rüffler** (FAU Erlangen-Nürnberg)  
*Optimal Switching for Hybrid Semilinear Evolutions*
- 11:45 h **Marc Steinbach** (Uni Hannover)  
*Transient Gas Transport:  
Challenges in Nonlinear Optimization and Beyond*
- 12:30 h **Lunch**
- 13:50 h **Ignacio E. Grossmann** (CMU, Pittsburgh)  
*Overview of MINLP Optimization Techniques  
and their Application to the Design of Gas Pipelines*
- 14:35 h **Oliver Kolb** (Uni Mannheim)  
*Modeling, Simulation and Optimization on Networks*
- 15:00 h **Jeroen Stolwijk** (TU Berlin)  
*Adaptive Error Control Strategies for the Simulation  
of Gas Flow in Networks*
- 15:25 h **Coffee Break including Poster Session**
- 16:25 h **Veronika Grimm** (FAU Erlangen-Nürnberg)  
*Energy Market Modeling: Investment Incentives  
under European Energy Market Designs*
- 16:50 h **René Henrion** (WIAS Berlin)  
*Robust-Stochastic Optimization Problems in  
Stationary Gas Networks*
- 17:15 h **Kai Strunz** (TU Berlin)  
*Multi-scale Modeling of Electric Power Systems*
- 18:30 h **Reception**

## October 7 Industrial Day “Coping With the Deregulated Network”

- 10:00 h **Opening**
- 10:15 h **Uwe Gotzes** (Open Grid Europe)  
*Challenges in a Deregulated Environment*
- 11:00 h **Edward Kent** (National Grid)  
*Understanding and Managing Uncertainty in National  
Transmission System*
- 11:45 h **Break**
- 12:15 h **Michael Walter** (DVGW e.V.)  
*Demonstrating Opportunities for Power-to-Gas on  
the European Level*
- 12:45 h **Lunch**
- 13:45 h **Geert Smits** (Fluxys)  
*Capacity Determination & Optimization in the  
Fluxys Belgium Network*
- 14:30 h Applied Scientific Talks:  
**Benjamin Hiller** (atesio GmbH)  
*Evaluating Gas Transport Network Capacity Using  
Mathematical Tools*  
**Björn Geißler** (develOPT GmbH)  
*Beyond Data Analytics in Gas Transport*
- 15:30 h **Break**
- 16:00 h **Jarig Steringa** (Gasunie Transport Services)  
*Generating Capacity Stress Tests for Decoupled  
Entry-Exit Systems*
- 16:45 h **Panel**  
*What Can Science Do for the TSOs*
- 17:30 h **Closing Reception**