

Call for participation

Workshop on macroeconomic energy systems modeling and optimization

21th of September 2016 Prague, Czech Republic

Dear Colleagues,

It is our pleasure to invite you to participate in the expert workshop on **“Macroeconomic energy systems modeling and optimization”** on September 21th, at the University of Prague. The workshop is part of the three day EU funded **“Energy Workshop on Modelling Smart Grids 2016 - A Challenge for Stochastics and Optimization”** (<http://www.energy-workshop.cz/>).

21th – 23th of September in Prague

The expert workshop intends to investigate new computing approaches to massively improve the computation times of today’s energy system models (ESM) to cope with their increasing complexity.

Quantitative ESM based on mathematical optimization provide a basis to answer political, technical, and economic questions regarding the future development of energy networks. The decentralization of power supply and volatile generation of renewable energy have created increased demand for more complex technical and economic systems to control production, storage, and distribution of energy. As a result today’s state-of-the-art, ESMs come with a high temporal, spatial, and technological level of detail and result in optimization problems (mostly linear and mixed-integer linear programs) that often cannot be solved satisfactorily with state-of-the-art solver software.

This workshop is devoted to advances both in models and solution algorithms by linking energy system modelling, operation research and computer science. The workshop aims to address the following topics:

- Computational challenges for energy system models (ESM)
- Concepts for implementing computational efficient energy system models (ESM)
- Improving mathematical optimization of Energy System Models (Focus: Algorithms)
- Parallelization and speed-up techniques
- Applying high performance computing to ESM (challenges, perspectives, practical experiences)

The “workshop on macroeconomic energy systems modeling and optimization” is highly interdisciplinary and brings together experts from the fields of:

- energy economics
- energy system modelling
- mathematics
- operations research
- computer science and high performance computing
- energy providers and operators

Energy Workshop on Modelling Smart Grids 2016 - A Challenge for Stochastics and Optimization

The workshop is part of a three day workshop organized by the Cost Action TD1207 on “Mathematical Optimization in the Decision Support Systems for Efficient and Robust Energy Networks” funded by the EU. Main goal of the overall workshop is to connect researchers and energy providers, traders and operators. The three day workshop will focus on using modern optimization, statistical and computational methods suitable for analysis of big data, creation of advanced forecast models for both deterministic and probabilistic prediction, development of new optimization methods for energy leak management, environmental quality improvement, etc.

<http://www.energy-workshop.cz/>

The second day (22nd of September 2016) is devoted to energy modelling and optimization from different perspectives and it is also open for public. Round table discussion with introductory talks given by leading representatives of Czech energy industry and research, and by representatives of European Network for Business and Industrial Statistics, will form part of the workshop. Language of the round table discussion will be both Czech and English, translation will be provided.

Main output of the workshop will be up-to-date knowledge transfer between researchers and domain experts and, conversely, opening new research targets and horizons as required by the power and gas industry.

During the third day COST Action TD 1207 will hold a series of working group meetings.

Registration

Workshop fee for all two/three days is 75 €.
Speakers are not obliged to pay the workshop fee.
Please follow [this link](#) to register for the workshop.

If you are interest in presenting your own work at the workshop please contact [Frieder Borggrefe \(DLR\)](#) or [Ambros Gleixner \(ZIB\)](#).

Venue

The workshop will take place at the Czech Technical University and Charles University in Prague, Czech Republic:



[Charles University in Prague](#)
[Faculty of Mathematics and](#)
[Physics](#)

Malostranské náměstí 25
118 00 Praha 1-Malá Strana



[Czech Technical University in Prague](#)
[Faculty of Mechanical Engineering](#)

Karlovo náměstí 13
121 35 Praha 2 - Nové Město

Organizing committee for “Macroeconomic energy systems modeling and optimization”

If you have any questions with regard to the “Macroeconomic energy system modeling and optimization workshop”, or if you wish to provide a presentation of your research, please contact the organizing committee of the expert workshop:

Frieder Borggreffe

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