

## International Symposium on Energy System Optimization – ISESO 2015

[www.iseso.org](http://www.iseso.org)

Heidelberg Institute for Theoretical Studies, Heidelberg, Germany

November 9<sup>th</sup>-10<sup>th</sup> 2015

### 2<sup>nd</sup> Call for Papers

#### Scope

The energy sector continues to undergo substantial changes. The ongoing transformation of the power generation system with an emphasis on decentralized renewable energy sources (RES), low-carbon generation and the diffusion of smart grid technologies brings about new challenges. The rapid expansion of RES requires a structural rearrangement of the power system in order to maintain the current level of supply security in future.

The power grid plays a key role in this context. While today's power grid infrastructure has been designed for centralized and controllable power production in conventional power plants, the RES expansion leads to an increasingly uncertain, volatile and decentralized power generation. Therefore, methods are needed which ensure a dependable operation of existing power grids in the light of these developments. Moreover, methods are needed to support power grid expansion planning and to design robust future power grids, both on a regional scale supporting microgrid design and on a global scale supporting national and continental transmission grid planning.



It is a central challenge to provide efficient optimization methods, including an accurate consideration of non-linear and non-convex AC power flow constraints. Knowledge and methods from different disciplines, such as mathematics, economics and electrical engineering, must be brought together to support power systems planning, ensuring an affordable, secure and environmentally friendly power supply. ISESO 2015 therefore seeks to foster interdisciplinary discussions and especially welcomes submissions with an integrative perspective. Topics to be covered include, but are not limited to:

- Mathematical modelling of power grids on all voltage levels
- New strategies for power grid operation
- Combined generation and transmission expansion planning
- Power grid planning including new components (e.g., FACTS, smart transformer stations)
- Efficient algorithms for OPF analyses
- Mixed integer non-linear programming (MINLP) for power grid operation and expansion
- Impact of demand response on power grid utilization and expansion requirements
- Power grid optimization under uncertainty
- Case studies on power grid operation and expansion

## Keynotes

The symposium will offer a mix of Keynote presentations and submitted papers with ample time for discussion and reflection. It is a pleasure for us to announce the following confirmed Keynote presentations:

- Professor Claudio Cañizares, Ph.D., University of Waterloo: “Energy Management Systems for Microgrids”
- Professor Shmuel S. Oren, Ph.D., University of California at Berkeley: “Smart Markets for a Smart Grid”

## Abstract Submission

We welcome submission of abstracts of up to 400 words by email to [iseso@h-its.org](mailto:iseso@h-its.org). The abstract should contain all relevant elements of your presentation/paper, including conclusions. Please use mathematical notation sparingly. Abstracts will be accepted in either Latex or Word.

## Post-Symposium Proceedings in Springer

All participants whose abstract is accepted are invited to submit papers of up to 8 pages for publication in the post-symposium proceedings. The proceedings will be published by Springer as “Advances in Energy System Optimization”. Papers will be accepted in Latex format only. A template will be provided on the symposium website ([www.iseso.org](http://www.iseso.org)). Please submit your papers by email to [iseso@h-its.org](mailto:iseso@h-its.org).

## Important Dates

- Abstract submission: June 15<sup>th</sup> 2015
- Notification of acceptance: June 30<sup>th</sup> 2015
- Paper submission: August 31<sup>st</sup> 2015
- Final paper submission and author’s registration: September 30<sup>th</sup> 2015
- Registration deadline for all other participants: October 31<sup>st</sup> 2015
- Symposium date: November 9<sup>th</sup>-10<sup>th</sup> 2015

## Registration fees

- (PhD) Student registration: 200,00 €
- Early bird registration (until August 31st 2015): 200,00 €
- Regular registration: 250,00 €

## Conference Venue

The Heidelberg Institute for Theoretical Studies (HITS) rests on a hill above the historic city center with a fantastic view over the city of Heidelberg. The symposium will offer Shuttle buses connecting HITS with the city center and the train station. As the seat of Germany’s oldest university and world famous research center for industry and science, Heidelberg is the perfect venue for a symposium. Whether linked for example with Max Planck Institutes or the European Media Laboratory, developing international contacts, exchanging research ideas and experiences, is part of this city’s daily life. Heidelberg is forward thinking and has received numerous awards for science and research.

## Accommodation

Recommendations for accommodation will be provided on the conference website. A number of rooms will be blocked for participants until September 30<sup>th</sup> 2015.

## Organising Committee

Wolf Fichtner, Karlsruhe Institute of Technology  
Vincent Heuveline, Heidelberg Institute for Theoretical Studies and Heidelberg University  
Thomas Leibfried, Karlsruhe Institute of Technology  
Valentin Bertsch, Karlsruhe Institute of Technology  
Michael Schick, Heidelberg Institute for Theoretical Studies  
Michael Suriyah, Karlsruhe Institute of Technology