ISESO 2015: Preliminary Program

Monday, November 9th 2015

09:00 Registration and Coffee

10:00 Opening

10:30 Keynote Presentation **(Chair: Thomas Leibfried)**

Energy Management Systems for Microgrids

Claudio Cañizares

University of Waterloo, Canada

11:30 Session: Demand Response and Distribution Grids **(Chair: Michael Suriyah)**

Dynamic Load Management Using New Forecast Methodologies for the Load Forecast at Distinct Power Transformer Stations

Richard Fitzenberger

EnBW Energie Baden-Württemberg AG, Germany

A Customized Evolutionary Algorithm for the Optimization of Residential Energy Resources

Ana Soares, Alvaro Gomes, Carlos Henggeler Antunes

University of Coimbra, Portugal

Comparison of Control Strategies for Electric Vehicles on Low Voltage Electrical Distribution Grid Level

Simon Marwitz [1], Marian Klobasa [1], David Dallinger [2]

[1] Fraunhofer Institute for Systems and Innovation Research, Germany

[2] Volkswagen Group

13:00 Lunch

14:00 Keynote Presentation **(Chair: Vincent Heuveline)**

Towards a Coupled (MI)NLP Solver for Coupled Energy Networks

Tanja Clees

Fraunhofer Institute for Algorithms and Scientific Computing, Germany

15:00 Session: Optimizing Transmission Grid Operation **(Chair: Thomas Leibfried)**

Optimal Storage Operation with Model Predictive Control in the German Transmission Grid

Nico Meyer-Hübner [1], Michael Suriyah [1], Thomas Leibfried [1], Viktor Slednev [1], Valentin Bertsch [1], Wolf Fichtner [1], Philipp Gerstner [2], Michael Schick [2], Vincent Heuveline [2]

[1] Karlsruhe Institute of Technology, Germany

[2] Heidelberg University, Germany

Security-Constrained Optimization Framework for Large-Scale Power Systems Including Post-Contingency Remedial Actions and Inter-Temporal Constraints

Jonas Eickmann, Christian Bredtmann, Albert Moser

RWTH Aachen University, Germany

16:00 Coffee

16:30 Session: Flexibility, Storage and Uncertainty Modeling **(Chair: Peter Zaspel)**

Effects of a Decentralized Electricity System Concerning Flexibility Options, RES Integration and Grid Infrastructure – Results From Two Scenario Based Research Projects

Matthias Koch, David Ritter

Öko-Institut e.V. - Institute for Applied Ecology, Germany

Dynamic Decision Making in Energy Systems with Storage and Renewable Energy Sources

Stephan Meisel [1], Warren Powell [2]

[1] University of Münster, Germany

[2] Princeton University, USA

Evaluation of Alternative Energy Scenarios for Turkey Using Bayesian Network Analysis

Ali Fahmi, Tolga Kaya

Istanbul Technical University, Turkey

18:00 End Day 1

20:00 Symposium Dinner

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09:00 Session: Challenges in Microgrids **(Chair: Michael Suriyah)**

An Optimal Investment Model for Battery Energy Storage Systems in Isolated Microgrids
Hisham Alharbi, Kankar Bhattacharya
University of Waterloo, Canada

A Dynamic Programming Approach to Multi-Period Planning of Isolated Microgrids
Benoît Martin, Emmanuel De Jaeger, Francois Glineur, Arnaud Latiers
Université Catholique de Louvain, Belgium

10:00 Coffee

10:30 Keynote Presentation **(Chair: Wolf Fichtner)**

Smart Markets for a Smart Electricity Grid
Shmuel S. Oren
University of California at Berkeley, USA

11:30 Session: Renewable Energy and Power Grid Expansion Planning **(Chair: Wolf Fichtner)**

The Network Development Plan and Resulting Challenges for Transmission System Operators
Dr. Alain Kaptue Kamga
TransnetBW, Germany

Curtailing Renewable Feed-in Peaks and its Impact on Power Grid Extension - A Load Flow Model Using an Enhanced Benders Decomposition Approach
David Gunkel, Dominik Möst
TU Dresden, Germany

Simulation of the Costs of Distribution Network Expansion in Baden-Württemberg
Thomas Eberl
University of Stuttgart, Germany

13:00 Lunch

14:00 Session: Data Provision for Power Grid Modeling **(Chair: Valentin Bertsch)**

Structure Analysis of the German Transmission Network Using the Open Source Model SciGRID
Carsten Matke [1], Wided Medjroubi [1], David Kleinhans [1], Sebastian Sager [2]
[1] *University of Oldenburg, Germany*
[2] *Otto-von-Guericke University Magdeburg, Germany*

Modelling of the Transmission Grid Using Geo Allocation and Generalized Processes
Simon Köppl, Felix Böing, Christoph Pellinger
FfE Research Centre for Energy Economics, Germany

Regionalizing Input Data for Generation and Transmission Expansion Planning Models
Viktor Slednev [1], Valentin Bertsch [1], Wolf Fichtner [1], Nico Meyer-Hübner [1], Michael Suriyah [1], Thomas Leibfried [1], Philipp Gerstner [2], Michael Schick [2], Vincent Heuveline [2]
[1] *Karlsruhe Institute of Technology, Germany*
[2] *Heidelberg University, Germany*

15:30 Coffee

16:00 Session: Convex vs. Nonconvex Approaches for Power Flow Analysis **(Chair: Vincent Heuveline)**

Convexity/Nonconvexity Certificates for Power Flow Analysis
Boris Polyak, Elena Gryazina
Moscow & Skoltech Center for Energy Systems, Russia

A Convex Model for the Optimization of Distribution Systems with Distributed Generation
Mariana Resener [1,2], Sergio Haffner [1], Panos M. Pardalos [3], Luıs A. Pereira [1]
[1] *Federal University of Rio Grande do Sul, Porto Alegre, Brazil*
[2] *Electric Power Distribution State Company, Porto Alegre, Brazil*
[3] *University of Florida, USA*

17:00 Closing

17:30 End Day 2