

ISESO 2015: Program Overview

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 Marwitz¹, Marian Klobasa¹, David Dallinger²

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-Hübner¹, Michael Suriyah¹, Thomas Leibfried¹, Viktor Slednev¹, Valentin Bertsch¹, Wolf

Fichtner¹, Philipp Gerstner², Michael Schick², Vincent Heuveline²

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, Dierk Bauknecht, Christoph Heinemann, David Ritter, Franziska Flachsbarth, Christof

Timpe

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

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

Stephan Meisel¹, Warren Powell²

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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Tuesday, November 10th 2015

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 Matke¹, Wided Medjroubi¹, David Kleinhans¹, Sebastian Sager²

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 Pellingner

fE Research Centre for Energy Economics, Germany

Regionalizing Input Data for Generation and Transmission Expansion Planning Models

Viktor Slednev¹, Manuel Ruppert¹, Valentin Bertsch¹, Wolf Fichtner¹, Nico Meyer-Hübner¹, Michael Suriyah¹,

Thomas Leibfried¹, Philipp Gerstner², Michael Schick², Vincent Heuveline²

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 Haffner¹, Panos M. Pardalos³, Luis A. Pereira¹

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