

Modelling Smart Grids

A New Challenge for Stochastics and Optimization

Prague, September 10 – 11, 2015

SCIENTIFIC PROGRAM

Thursday, September 10

9:00 – 11:00: Plenary lectures I

- Jaromír Antoch (Charles University in Prague, Czech republic)
Electricity consumption prediction with functional linear regression
- Claudia D'Ambrosio (CNRS LIX, Ecole Polytechnique, France)
Optimization based on mixed integer nonlinear programming (MINLP) method

11:00 – 11:30: Coffee break

11:30 – 12:30: Plenary lecture II

- Marek Brabec (The Czech Academy of Sciences, Czech republic)
Modeling dynamics and short term prediction of complex processes

12:30 – 14:00: Lunch

ROUND TABLE DISCUSSION ON INFORMATICS FOR MODERN ENERGY MANAGEMENT

14:00 – 14:30: Plenary round table discussion : Opening

- Alessandro Di Bucchianico (Eindhoven University, Netherlands)

14:45 – 15:25: Thematic round table discussions I

- Topic: **ENERGY IS MONEY** (Governmental and private financing of research)
Moderators: Emil Pelikán and Vladimír Kebo

15:25 - 15:35: Break

15:35 – 16:15: Thematic round table discussions II: FACE-TO-FACE NETWORKING (ACADEMIC RESEARCH AND INDUSTRIAL NEEDS)

- Topic: **FACE-TO-FACE NETWORKING** (Academic research and industrial needs)
Moderators: Jaromír Antoch and Alessandro Di Bucchianico

16:15 - 16:25: Break

16:25 – 17:05: Thematic round table discussions III: REAL DATA - A CHALLENGE FOR DECISION MAKING (RESEARCH TARGETS AND HORIZONS REQUIRED BY ENERGY INDUSTRY)

- Topic: **REAL DATA - A CHALLENGE FOR DECISION MAKING** (Research targets and horizons required by energy industry)
Moderators: Marek Brabec, Claudia D'Ambrosio and Gejza Dohnal

17:05 - 17:15: Break

17:15 – 17:30: Plenary round table discussion : Conclusions

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TOPIC OF THE DAY: MATHEMATICAL OPTIMIZATION AND STOCHASTICS IN THE
DECISION SUPPORT SYSTEMS FOR EFFICIENT AND ROBUST ENERGY NETWORKS

9:00 – 10:30: Contributions I

- Tomáš Masák (Charles University in Prague, Czech republic)
Binary Decision Diagrams in Reliability Theory
- Gejza Dohnal (Czech Technical University in Prague, Czech republic)
Successive Events and Energy Networks
- Ondřej Konár (The Czech Academy of Sciences, Czech republic)
Forecasting Number of Natural Gas Consumers and their Total Consumption with R
- Ivan Kasanický (The Czech Academy of Sciences, Czech republic)
Data Assimilation using Spectral Approximation of Covariance in EnKF

10:30 – 11:00: Coffee break

11:00 – 12:30: Contributions II

- Daniel Georgiev (University of West Bohemia, Czech republic)
Tractable Interval Methods for Secure and Flexible Power System Operation
- Milan Garbiar (Tangent Works, Slovakia)
Tackling mathematical challenges of energy forecasting for smart grid
- Václav Šmídl (The Czech Academy of Sciences, Czech republic)
Statistical Calibration of Dynamic Ampacity Model

12:30 – 14:00: Lunch

14:00 – 15:30: Contributions III

- Zdeněk Wagner and Pavel Kovanic (The Czech Academy of Sciences, Czech republic)
Advanced Data Analysis for Industrial Applications
- Zdeněk Fabián (The Czech Academy of Sciences, Czech republic)
Distance of observations
- Eliška Cézová (Czech Technical University in Prague, Czech republic)
Analysis of pollution in the neighborhood of opencast coal mines

15:30 – 15:45: Closing