Department of Mathematics, University of Coimbra, Portugal

with the support of COST Action TD1207 "Mathematical Optimization in the Decision Support Systems for Efficient and Robust Energy Networks"

Programme Outline

Thursday, October 27		
08:30-09:15	Registration	Department of Mathematics
09:15-09:30	Opening session	Room A
09:30-10:30	Plenary Session	Room A
10:30-11:00	Coffee-break	
11:00-13:00	Parallel sessions A	Room A and Room B
13:00-14:15	Lunch	Science Museum Cafeteria
14:15-16:15	Parallel sessions B	Room A and Room B
16:15-16:45	Coffee-break	
16:45-18:45	Parallel sessions C	Room A and Room B
20:30-	Dinner	Machado de Castro Museum
Friday, October 28		
09:15-10:15	Plenary Session	Room A
10:15-10:45	Coffee-break	
10:45-13:30	Sessions D	Room A
13:30-14:30	Lunch	Science Museum Cafeteria
14:30-18:30	Cost Action Management Committee Meeting	Room A

Thursday, October 27

09:15-09:30	Opening session – Room A
09:30-10:30	Plenary Session - Room A
	Chair – Thorsten Koch
	A SIMULATION MODEL FOR DETERMINING OPTIMAL DEMAND RESPONSE ACTIONS: APPLICATION TO THE ERCOT POWER MARKET
	Steven A. Gabriel, University of Maryland, USA
10:30-11:00	Coffee-break
11:00-13:00	Parallel sessions A

Parallel sessions A

Session A1 - Demand side management and demand response	**Session A2 -** Integration of renewable generation
Chair - Laureano Escudero	Chair - Viktor Slednev
Room A	Room B
ON THE CONCEPT OF MULTI-PERIOD FLEXIBILITY FROM HOME ENERGY MANAGEMENT SYSTEMS	ESTIMATION OF ACTIVE AND REACTIVE FLEXIBILITY RANGE IN PRIMARY SUBSTATIONS
Rui Pinto, Ricardo Bessa and Manuel Matos	João Silva, Jean Sumaili, Ricardo J. Bessa, Luís Seca, Manuel Matos
A TWO-STAGE STOCHASTIC MIXED 0-1 OPTIMIZATION MODEL WITH RISK MANAGEMENT FOR AN ELECTRICITY RESPONSE PROGRAM IN THE DOMESTIC SECTOR	OPTIMIZATION OF ELECTRICITY SUPPLY IN FERNANDO DE NORONHA INCLUDING NEW PHOTO-VOLTAIC SOURCES
Laureano Escudero, Aleix Badia and Celeste Pizarro	Caroline Ferreira Paulino, Jorge Daniel P. Mendieta and Paulo de Barros Correia
SMART RATES AND DEMAND RESPONSE: MODEL FROM SCENARIOS	HIGHLY RESOLVED RES EXPANSION MODELING FOR POWER SYSTEM ANALYSIS ON TRANSMISSION GRID LEVEL IN EUROPE
A. Campos, C.M.V. Tahan	Viktor Slednev, Valentin Bertsch, Manuel Ruppert and Wolf Fichtner
DEMAND RESPONSE OPTIMIZATION OF MICROGRID WITH CENTRALIZED AND DISTRIBUTED RENEWABLE ENERGY PRODUCTION	SIMULATION MODEL TO ASSESS THE LONG-TERM EFFECTS OF DISTRIBUTED PV DEPLOYMENT IN THE BRAZILIAN DISTRIBUTION INDUSTRY
Diana Neves, André Pina and Carlos A. Silva	Sebastian Zapata, Monica Castaneda, Daniel Ferreira, Nivalde de Castro, Isaac Dyner and Carlos J. Franco

13:00-14:15	Lunch

14:15-16:15 Parallel sessions B

Parallel sessions B	
Session B1 - Smart grids 1	**Session B2 -** Energy systems and markets
Chair - Jérôme De Boeck	Chair - Manuel Wetzel
Room A	Room B
ROBUST PMU PLACEMENT	EVOLUTIONARY AND PARTICLE SWARM OPTIMIZATION APPROACHES FOR DETERMINING TIME-OF-USE TARIFFS CONSIDERING DEMAND RESPONSE USING BILEVEL PROGRAMMING MODELS
Margarida Carvalho and Ana Viana	Pedro Carrasqueira, Maria João Alves and Carlos Henggeler Antunes
A MODELLING APPROACH FOR INTERCONNECTED ENERGY NETWORKS (GAS AND ELECTRICITY) TO ASSESS THE EVOLUTION OF REGIONAL SUPER GRIDS	ELECTRICITY PRICE SPIKE PREDICTION VIA BOOSTING TREES AND WAVELET ANALYSIS
Catalina Spataru and Janusz Bialek	Shijie Deng, Yibiao Lund and Xiaoming Huo
FROM CONVENTIONAL ENERGY NETWORKS TO SMART GRIDS: CHARTING RECENT RESEARCH TRENDS WITH A BIBLIOMETRIC ANALYSIS	MODELLING MARKET CLEARING PRICE AND GLOBAL URANIUM BANK EFFECT IN THE NUCLEAR ENERGY MARKET
Francisco Pires Costa and Carlos A. Santos Silva	A. Auzans and A.H. Tkaczyk
POWER FLOW OPTIMIZATION IN THE PRESENCE OF MICROGRIDS	COMPARISON OF ENHANCED BENDERS DECOMPOSITION METHODS FOR STOCHASTIC OPTIMIZATION OF ENERGY SYSTEM MODELS AND CHALLENGES FOR THE APPLICATION TO HIGH PERFORMANCE COMPUTING
Jérôme De Boeck, Boris Detienne, Stefania Pan and Michael Poss	Manuel Wetzel and Frieder Borggrefe

16:15-16:45 Coffee-break

16:45-18:45 Parallel sessions C

Parallel sessions C	
Session C1 - Network integration and ICT	**Session C2 -** Smart grids 2
Chair - Daniel Iglhaut	Chair - Christiano Lyra
Room A	Room B
HOW CAN CO-OPERATION IN ENERGY AND COMMUNICATION SYSTEMS IN CRITICAL OPERATION STATUS BE SECURED?	SHORT-TERM FORECASTING OF PRICE-RESPONSIVE LOADS USING INVERSE OPTIMIZATION
Daniel Iglhaut, Daniel Schöllhorn and	G. De Zotti, J. S. Gallego and J. M. Morales

Matthias Wissner

PARTICLE SWARM OPTIMIZATION IN VIRTUAL POWER PLANTS WITH COGENERATION SYSTEMS

Shu Xian Toh and Pedro S. Moura

A PREDICTIVE CONTROL ALGORITHM TO OPTIMIZE THE OPERATION OF HEAT PUMPS IN RESIDENTIAL BUILDINGS IN THE CONTEXT OF SMART GRIDS

Philippe Andre, Elisabeth Davin

THE IMPACT OF INCREASED SPATIAL RESOLUTION MODELLING ON RENEWABLE ENERGY INTEGRATION IN WEST AFRICA'S INTERCONNECTED ELECTRICITY NETWORK

Omotola Adeoye and Catalina Spataru

OPTIMIZATION OF TREE-SHAPED FLOWS OVER SMART GRIDS

Christiano Lyra

THE GOOD, THE BAD, AND THE UGLY: PREDICTING GAS DEMANDS IN GERMANY

Thorsten Koch

ENERGY STORAGE MANAGEMENT SYSTEM FOR MICROGRIDS UNDER EMERGENCY CONDITIONS

Luis Osorio-Valenzuela, Franco Quezada and Óscar C. Vásquez

20:30- Dinner

Friday, October 28

09:15-10:15 Plenary Session - Room A

Chair – Carlos Henggeler Antunes

POTENTIAL AND LIMITATIONS OF PARALLEL COMPUTING FOR MIXED-INTEGER LINEAR ENERGY SYSTEM MODELS

Ambros Gleixner, Zuse Institute Berlin , Germany

10:15-10:45 Coffee-break

10:45-13:30 Parallel sessions

Session D - Energy models

Chair - Ruth Misener

Room A

A PARAMETRIC APPROACH TO THE POOLING PROBLEM

Radu Baltean-Lugojan and Ruth Misener

AN EFFICIENT ROBUST SOLUTION TO THE TWO-STAGE STOCHASTIC UNIT COMMITMENT PROBLEM

Ignacio Blanco and Juan Miguel Morales

A HYBRID META-HEURISTIC/BENDERS OPTIMAL GENERATION COORDINATION METHOD WITH ELECTRIC VEHICLES AS STOCHASTIC RESERVOIRS

Vladimiro Miranda and Hrvoje Keko

THE MULTI-SCALE GENERATION AND TRANSMISSION EXPANSION MODEL

A. Sarid and M. Tzur

NUMERICAL EXPERIMENTS ON DYNAMICALLY CHOOSING CUTTING MODELS IN BUNDLE METHODS

Christoph Helmberg

NEW TECHNIQUES OF DYNAMIC MODELLING AND STABILITY ANALYSIS FOR STOCHASTIC NETWORK SYSTEMS APPLIED TO ENERGY SYSTEMS

Jorge A. González-Zumba, Pedro Fernández de Córdoba and Volker Mehrmann

13:30-14:30 Lunch

14:30-18:30 Cost Action Management Committee Meeting