

COMPENG 2010 Scientific Program and Schedule

Monday, Feb 22nd, 2010

08.00-09.00 Registration

09.00-09.20 Welcome Address
- CNR President
- IEEE Italy Section Chair
- AEIT President

09.20-09.30 Introduction to the Conference by COMPENG General Chair

09.40-10.40 Invited Talk: Ian Dobson (University of Wisconsin-Madison, USA)
Propagation of Load Shed in Cascading Line Outages Simulated by OPA

10.40-11.00 Coffee Break

11.00-12.00 Invited Talk: Antonello Monti (Institute for Automation of Complex Power System at the E.ON Energy Research Center, RWTH Aachen University, Germany)
Power Grids of the Future: Why Smart Means Complex

12.00-13.00 Session: Power Grids and Systems I – Chair: Ian Dobson

12.00-12.20 *Dynamic and Steady State Security Constraints in the Transfer Capability Assessment* - Stendley Busan, Muhammad Murtadha Othman, Ismail Musirin, Azah Mohamed, and Aini Hussain

12.20-12.40 *An Integrated Platform for Power System Security Assessment Implementing Probabilistic and Deterministic Methodologies* - Samuele Grillo, Stefano Massucco, Andrea Pitto, Emanuele Ciapessoni, Diego Cirio, and Enrico Gaglioti

12.40-13.00 *Modeling of DFIG Wind Turbine and Lithium Ion Energy Storage System* - Mattia Marinelli, Andrea Morini, and Federico Silvestro

13.00-14.40 Lunch Break

15.00-16.00 Invited Talk: Martí Rosas Casals (Universitat Politècnica de Catalunya and Complex Systems Lab - ICREA - Universitat Pompeu Fabra, Barcelona, Spain)
Power Grids as Complex Networks: Topology and Fragility

16.00-16.40 Session: Power Grids and Systems II – Chair: Antonello Monti

16.00-16.20 *Towards an Uncertainty-Based Model Level Selection for the Simulation of Complex Power Systems* - Andrea Benigni, Ferdinanda Ponci, and Antonello Monti

16.20-16.40 *Discerning Electricity Consumption Patterns from Urban Allometric Scaling* - Ricard Horta-Bernús, Martí Rosas-Casals, and Sergi Valverde

16.40-17.00 Coffee Break

17.00-18.00 Session: Power Grids and Systems III – Chair: Martí Rosas Casals

17.00-17.20 *The Concept of Betweenness in the Analysis of Power Grid Vulnerability* - Ettore Bompard, Di Wu, and Fei Xue

17.20-17.40 *Dispatch of Distributed Generators Using Replicator Dynamics* - Andrés Pantoja and Nicanor Quijano

17.40-18.00 *A System Level Model of Possible Integration of Building Management System in SmartGrid* - Slobodan Lukovic, Velimir Congradac, and Filip Kulic

Tuesday, Feb 23rd, 2010

09.00-10.00 Invited Talk: Marios M. Polycarpou (KIOS Research Center for Intelligent Systems and Networks; Department of Electrical and Computer Engineering University of Cyprus)
Intelligent Health Monitoring of Critical Infrastructure Systems

10.00-11.00 Session: Critical Infrastructures I – Chair: Marios M. Polycarpou

10.00-10.20 *A Two-Stage Approach to Simulate Interdependent Critical Infrastructures* - Emiliano Casalicchio, Roberto Setola, and Sandro Bologna

10.20-10.40 *Online Distributed Interdependency Estimation with Partial Information Sharing* - Andrea Gasparri, Francesco Iovino, Gabriele Oliva, and Stefano Panzieri

10.40-11.00 *Ontological Framework to Model Critical Infrastructures and their Interdependencies* - Elisa Castorini, Paolo Palazzari, Alberto Tofani, and Paolo Servillo

11.00-11.20 Coffee Break

11.20-12.20 Invited Talk: Salvatore Tucci – Emiliano Casalicchio (Università di Roma Tor Vergata, Italy)
Cyber Dependencies: Characterization, Discovery and Analysis

12.20-13.20 Session: Critical Infrastructures II – Chair: Marios M. Polycarpou

12.20-12.50 *Macro and Micro Agent-Based Modeling and Simulation of Critical Infrastructures* - Emiliano Casalicchio, Emanuele Galli, and Salvatore Tucci

12.50-13.10 *On Modeling and Measuring Inter-dependencies among Critical Infrastructures* - Vincenzo Fioriti, Gregorio D'Agostino, and Sandro Bologna

13.10-13.20 *Improving Resilience of Interdependent Critical Infrastructures via an On-Line Alerting System* – Paolo Capodieci et al.

13.20-14.40 Lunch Break

15.00-16.00 Invited Talk: Vittorio Rosato (ENEA Computing and Modelling Unit, Casaccia Research Centre, Roma; and Ylichron Srl, Roma, Italy)
Interdependency Effects Measured on Complex Interdependent Networks

16.00-17.00 Session: Applications of Complex Systems Engineering
Chair: Vittorio Rosato

16.00-16.20 *Agents Based Intelligent Grid Matchmaking System for EDA Tools on a Cluster Grid* - Massimo Orazio Spata and Salvatore Rinaudo

16.20-16.40 *A New Stock Market Model with Adaptive Rational Equilibrium Dynamics* - Claudio Cecchetto and Fabio Dercole

16.40-17.00 *Development of Dynamic Muscle Model with Functional Electrical Stimulation* - R. Jailani, M.O. Tokhi, S. Gharooni, and Z. Hussain

17.00-17.20 Coffee Break

17.20-18.40 Session: Complex Systems Science II – Chair: Cristina Masoller

17.20-17.40 *Quantifying stochastic and coherence resonances and detecting noise-induced order via information theory complexity measures* - Cristina Masoller and Osvaldo Rosso

17.40-18.00 *Evolving Topologies for Network Synchronization* – Pietro De Lellis, Mario di Bernardo, Franco Garofalo, and Maurizio Porfiri

18.00-18.20 *Global Behaviour of Fixed-Pathways Dynamics in Technological Networks* - J.P. Cardenas, J. Salcedo, R.M. Benito, M.L. Mouronte, and L.G. Moyan

18.20-18.40 *Incomplete Homoclinic Scenarios in Semiconductor Devices with Optoelectronic Feedback: Generation and Synchronization* - K. Al-Naimee, S.F. Abdalah, F. Marino, M. Ciszak, R. Meucci, and F.T. Arecchi

18.40-20.00 Break

20.00 Social dinner (venue to be announced)

Wednesday, Feb24th, 2010

09.00-10.00 Invited Talk: Maziar Nekovee (BT Research; and University College London, UK)
Mechanism Design for Cognitive Radio Networks

10.00-10.40 Session: Communication Networks I – Chair: Maziar Nekovee

10.00-10.20 *A Model for the Complex Topology of SDH Telecommunication Networks* - J.P. Cárdenas, A. Santiago, R.M. Benito, M.L. Mouronte, and V. Feliu

10.20-10.40 *A Dynamic OFDMA Oriented Resource Control for WiMAX Networks* – Laura Pimpinella

10.40-11.00 Coffee Break

11.00-12.00 Session: Communication Networks II – Chair: Maziar Nekovee

11.00-11.20 *Measurement, Analysis and Modeling of Multi-layered Communication Networks* - Eugenio Costamagna, Stefano Giordano, and Walter Willinger

11.20-11.40 *On the Overall Performance of Informational Networks* – Daniele De Martino

11.40-12.00 *Initial Radius Selection of Sphere Decoder for Practical Applications of MIMO Channels* - Fatemeh Eshagh Hosseini and Shahriar Shirvani Moghaddam

12.00-13.00 Session: Complex systems Science II – Chair: R. Meucci

12.00-12.20 *Implementation of a Wolfram Machine* - Paola Belluomo, Luigi Fortuna, Mattia Frasca, and Angelo Sarra Fiore

12.20-12.40 *Investigating Information Flows across Complex Product Development Stages by Using Social Network Analysis (SNA)* – Corrado Io Storto

12.40-13.00 *Controlling Multistability in Chaotic Systems* - A. Geltrude, B.K. Goswami, K. Al-Naimee, S. Euzzor, R. Meucci, and F.T. Arecchi

13.00-14.40 Lunch Break

15.00-16.20 Session: Complex Systems Science III – Chair: Alessandro Rizzo

15.00-15.20 *Clustering Time Series by Network Community Analysis* - Carlo Piccardi and Lisa Calatroni

15.20-15.40 *A New Model for Growing Social Networks* - Arturo Buscarino, Luigi Fortuna, Mattia Frasca, and Angelo Sarra Fiore

15.40-16.00 *Polarization Coding in CO₂ Lasers: Spatial and Temporal Behavior* – R. Meucci, K.A. Al Naimee, S.F. Abdalah, S. De Nicola, and F.T. Arecchi

16.00-16.20 *On the Boundaries of Basins of Attraction in Piecewise Smooth Systems* - Alessandro Colombo and Ugo Galvanetto

16.20-17.20 Session: Applications of Complex Systems Engineering
Chair: Alessandro Rizzo

16.20-16.40 *Inverse Modeling of 3D High Resolution Ground Deformation Maps Derived by Integrating GPS and DInSAR Data* - Giuseppe Nunnari, Alessandro Spata, Giuseppe Puglisi, Francesco Guglielmino, and Alessandro Bonforte

16.40-17.00 *An Agent-Based Architecture for Home Care Monitoring and Education of Chronic Patients* - Davide Capozzi and Giordano Lanzola

17.00-17.20 *Constrained Active Power Reschedule Using Immune System Technique for Static Security Enhancement* - Nor Rul Hasma Abdullah, Ismail Musirin, and Muhammad Murtadha Othman

17.20 – Wrap up and conclusion