

Wednesday October 10th

9.00 – 9.30

Opening

Plenary session [Chair: Duccio Fanelli] Room A

9.30 – 10.15

Antonio Politi

Use of permutation entropy in the analysis of complex time series

10.15 – 11.00

Giovanni De Ninno

Generation of femtosecond extreme-ultraviolet optical vortices

11.00 – 11.20

Coffee break

Laser dynamics and nonlinear optical systems [Chair: Riccardo Meucci and Francesco Marino] Room A

11.20 – 11.40

Stephane Barland

Experimental analysis and mean-field dynamics of a fully connected network of spiking neuromorphic optical devices

11.40 – 12.00

Gian Luca Lippi

Nonlinear dynamics at the meso- and nanoscale: stochasticity meets determinism

12.00 – 12.20

Silvia Soria

Parametrical Optomechanical Oscillations: transition to chaos

12.20 – 12.40

Marco Ciofini

Self imaging configurations for passive global Coherent Laser Beam Combining

12.40 – 13.00

Kais Al Naimee

Encrypted Chaos In Quantum Dot Light Emitting Diode

13.00 – 14.00

Lunch

Data and time series analysis [Chair: Mattia Frasca] Room A

14.00 – 14.20

Angelo Di Garbo

Inferring coupling intensity and directionality between time series

14.20 – 14.40

Elbert E. N. Macau

Detecting causal relations from real data experiments by using recurrence

14.40 – 15.00

Sanjivani Bhabad

Parameter Estimation Using HMM for Disordered Speech

15.00 – 15.20

Mauro Focardi

The PLATO Payload and Data Processing System SpaceWire network

15.20 – 15.40

Coffee break

Biophysics [Chair: Valentina Gambuzza] Room A

15.40 – 16.00

Riccardo Cicchi

Polarization-modulated SHG microscopy allows probing the supramolecular symmetry of collagen

16.00 – 16.20

Francesco Piazza

Non-equilibrium chemical kinetics: insight into prebiotic chemistry

16.20 – 16.40

Daniele Farnesi

Fractal-radiomics as complexity analysis of CT and MRI cancer images

16.40 – 17.00

Giulia Bassignana

Identification of Driver Nodes in Genetic Networks Regulating Macrophage Activation

Thursday October 11th

Plenary session [Chair: Massimo Materassi] Room A

9.00 – 9.45	Philippe Ghendrih	Challenges in addressing the complex path towards fusion energy
9.45 – 10.30	Nadia Dominici	Modular control of human locomotion

10.30 – 11.10 Coffee break

Synchronization [Chair: Francesca Di Patti] Room A

11.10 – 11.30	Alessio Cardillo	Coevolution of synchronization and cooperation in costly networked interactions
11.30 – 11.50	Lucia V. Gambuzza	Remote synchronization in tree structures of Stuart-Landau oscillators
11.50 – 12.10	Simona Olmi	Qualitative Stability and Synchronicity Analysis of Power Network Models in Port-Hamiltonian form
12.10 – 12.30	Alessandro Torcini	Transition from asynchronous to oscillatory dynamics in balanced spiking networks with instantaneous synapses
12.30 – 12.50	Li-Qun Chen	Cluster synchronization via sliding control of uncertain node-colored complex networks

Invited special session “Controller and Power Hardware-in-the-Loop (C/PHIL) Simulation of Electric Power Apparatus and Control – Theory and Practice” [Chairs: Georg Lauss and Mischa Steurer] Room B

10.50 – 11.10	Ustun Taha Selim	Using RSCAD's Simplified Inverter Components to model Smart Inverters in Power Systems
11.10 – 11.30	Marija Stevic	A Bilateral Teleoperation Approach for Interface Algorithms in Distributed Real-Time Simulations
11.30 – 11.50	Christian Dufour	Highly stable rotating machine models using the state-space-nodal real-time solve
11.50 – 12.10	Ron Brandl	Advanced Testing Chain Supporting the Validation of Smart Grid Systems and Technologies
12.10 – 12.30	Joern Geisbuesch	Set-up of a Dynamic Multi-purpose Power-Hardware-in-the-Loop System for New Technologies Integration
12.30 – 12.50	Shahab Karrari	Frequency and Voltage Support by a High-speed Flywheel Energy Storage System (FESS): A Real-time Simulation for Hardware-in-the-Loop (HIL) Testing

12.50 – 13.50 Lunch

13.50 – 14.40 Poster session

Nonlinear dynamics and stochastic processes 1 [Chair: Simona Olmi] Room A

14.40 – 15.00	Sarah De Nigris	Graph Semi-Supervised Learning through bridgeness biased random walks
15.00 – 15.20	Mattia Frasca	On using Feynman-Sierpinski resonators to obtain high-dimensional chaos in a single-transistor oscillator
15.20 – 15.40	Jean-Marc Ginoux	Torus Breakdown in a Uni Junction Memristor
15.40 – 16.00	Graziano Chesi	On the Complexity of Robust Stability Analysis of Polytopic LTI Systems

16.00 – 16.20 Coffee break

	Nonlinear dynamics and stochastic processes 2 [Chair: Francesco Marino] Room A	
16.20 – 16.40	Massimo Materassi	Metriplectic Structure of a Radiation-Matter Interaction Toy Model
16.40 – 17.00	Jose A. Roversi	The role of the instabilities on the quantum entanglement generation
17.00 – 17.20	Giacomo Innocenti	Frequency analysis of complex dynamics in memristive circuits
17.20 – 17.40	Matteo Morini	A Simple Model of Coevolution for Macroscopic and Microscopic Levels
17.40 – 18.00	Sara Nicoletti	Non normal amplification of stochastic quasi-cycles

16.10 – 18.00 **Meeting of the IEEE Working Group Recommended Practice for Hardware-in-the-Loop Simulation Based Testing of Electric Power Apparatus and Controls [Chairs: Mischa Steurer, Georg Lauss and Blake Lundstrom] Room B**

20.00 **Social Dinner**

Friday October 12th

	Complex Networks 1 [Chair: Giacomo Innocenti] Room A	
9.00 – 9.20	Zuzana Borcinova	Solving the Capacitated Vehicle Routing Problem by a Parallel Micro Genetic Algorithm
9.20 – 9.40	Peter Czimmermann	Computation of Transportation Performance in Public Service Systems
9.40 – 10.00	Lubos Buzna	Collective Effects and Performance of Algorithmic Electric Vehicle Charging Strategies
10.00 – 10.20	Jaroslav Janacek	Online Learning Search for Stackelberg Game Strategy
10.20 – 10.40	Pere Colet	Secondary control may prevent Braess' paradox in AC power grids
10.40 – 11.00	Violet Mwaffo	A data-driven method to dissect the dynamics of the causal influence in complex dynamical systems

11.00 – 11.20 **Coffee break**

	Complex Networks 2 [Chair: Giulia Cencetti] Room A	
11.20 – 11.40	Charles R. Farrar	A Complexity-Based Framework for Structural Health Monitoring
11.40 – 12.00	Ihusan Adam	Reactive explorers to unravel network topology
12.00 – 12.20	Franco Bagnoli	Risk perception and epidemics in complex computer networks
12.20 – 12.40	Zakaria Ghalmane	Betweenness Centrality for Networks with Non-Overlapping Community Structure
12.40 – 13.00	Onur Senturk	Agent-based model and simulations of the management of ports: the import processes at the port of Genoa

13.00 – 14.00 **Lunch**