SCIENTIFIC PROGRAM (FINAL)

Sunday 5
17:00–20:00  Registration and welcome party
Adjoin

Monday 6
8:00-8:30  Registration
8:30 -8:45  Welcome (Lino Reggiani)
8:45-9:00  Opening (Academic Authorities)

M1 - Enhanced and Suppressed Shot Noise  (I) (C. Glatthi, Chair)
9:05-9:45  Peculiar properties of fractionally charged quasiparticles determined by shot noise measurements, Mordehai Heiblum (plenary)
9:45-10:15 Quantum shot noise and orbital entanglement, Markus Buttiker (keynote)
10:15-10:35 Shot noise suppression as indicator of coherent tunneling in resonant diodes, Vladimir Aleshkin (invited)
10:35-10:55 Enhanced shot noise in diffusive S/N/S junctions, Francois Lefloch (invited)
10:55-11:20  Coffee Break

M2 - Enhanced and Suppressed Shot Noise  (II) (M. Buttiker, Chair)
11:20-11:50  High frequency quantum shot noise: can quiet electrons generate sub-poissonian photons?, Christian Glatthi (keynote)
11:50-12:10 Discussion of shot noise suppression in cascades mesoscopic cavities, Massimo Macucci (invited)
12:10-12:30 Shot noise in mesoscopic systems within the first quantization formalism: a de Broglie-Bohm wave-particle description, Xavier Oriols (invited)
12:30-12:50  Shot noise suppression and enhancement in 2D hopping and single-electron arrays, Viktor Sverdlov (invited)
12:50-15:30  Lunch

M3 -Noise in Biological Systems  (I) (S. Bezrukov, Chair)
15:30-16:00 “Fatal scream” of bacteria infected by phages: nanoscale detection of bacteriophage triggered ion cascade, Maria King (keynote)
16:00-16:20 Background processes and the generation of the flicker noise in nanochannel transport, Ilona Kosinska (invited)
16:20-16:40  Signal processing problems of neurocardiological fluctuations, Zoltan Gingl (invited)
16:40-17:00 Non-linear Dynamics and Noise in rather realistic α-Helix Models, simulation results, Per-Anker Lindgard (invited)
17:00-17:15  Fluctuations of the single photon response in visual transduction, Daniele Andreucci (oral)
17:15-17:35  Coffee Break
M4 - Noise in Devices  (I)  (L. Varani, Chair)

17:35-18:05  **TeraHertz emission and noise spectra in HEMTs**,  Javier Mateos  (keynote)
18:05-18:25  **1/f and RTS Noise in submicron devices: Faster is noisier**,  Lode Vandamme  (invited)
18:25-18:45  **Noise and Charge Transport in Carbon Nanotube Devices**,  Gijs Bosman  (invited)
18:45-19:05  **Key issues in trap-assisted low-frequency device noise simulation in nonlinear large-signal conditions**,  Fabrizio Bonani  (invited)
19:05-19:20  **Simulating noise performance of advanced devices down to cryogenic Temperature**,  Francesco Catalfamo  (oral)

Adjourn

Tuesday 7

T1 -Theoretical Frontiers on Noise and Fluctuations  (I)  (N. VanKampen, Chair)

8:50-9:20  **Extinction times for birth-death processes and the failure of the Fokker-Planck approximation**,  Charlie Doering  (keynote)
9:20-9:40  **Paradoxes in probability, information and entropy**,  Derek Abbott  (invited)
9:40-10:00  **Applications of Stochastic Differential Equations in Circuit Analysis**,  Andrew Allison  (invited)
10:00-10:20  **Full counting statistics of mesoscopic electron transport**,  Wolfang Belzig  (invited)
10:20-10:40  **The role of quantum noise in quantum key distribution**,  Janos Bergou  (invited)
10:40-11:00  **Classical and quantum probability and noise: the history and problems**,  Leon Cohen  (invited)

11:00-11:25  Coffee Break

T2 - Experimental frontiers on noise and fluctuations  (G. Bosman, Chair)

11:25-11:55  **Low frequency noise in non-Ohmic regimes in disordered systems**,  Kamal K. Bardhan  (keynote)
11:55-12:25  **Noise activated switching in a driven, nonlinear micromechanical oscillator**,  Ho Bu Chan  (keynote)
12:25-12:45  **Random telegraph signal in Si n-MOSFETs: a way toward single spin resonance detection**,  Marco Fanciulli  (invited)
12:45-13:00  **High frequency noise in AlGaN/GaN heterostructures**,  Svetlana Vitusevich  (oral)

13:00-15:30  Lunch

T3 - Noise and Chaos  (L. Kish, Chair)

15:30-16:00  **Emergent oscillations in a system of coupled overdamped bistable elements subject to noise floor**,  Adi Balsara  (keynote)
16:00-16:20  **Quantum irreversibility and Chaos in mesoscopic devices**,  Florentino R. Borondo  (invited)
16:20-16:40  **Langevin processes describing clustering of tracers**,  Michael Wilkinson  (invited)
16:40-16:55  **Microscopic theory for the quantum to classical crossover in chaotic transport**,  Philippe Jacquod  (oral)
16:55-17:10  **Chaos and noise-driven emergence of order from disorder?**,  Mattia Frasca  (oral)
17:10-17:25  **Divergence of the chaotic layer width and diffusion rate adiabatic limit**,  Slava Soskin

17:25-17:45  Coffee Break
T4 - Noise and Coherence (M. Heiblum, Chair)

17:45-18:15 Do all correlated emission laser produce amplified entangled light? Suhail Zubairy (keynote)
18:15-18:35 Absolutely secure data encryption with classical information? Laszlo Kish (invited)
18:35-18:55 Can self-sustaining currents be induced in a system of mesoscopic cylinders? Jurek Luczka (invited)

19:30 Meeting and Dinner of the Scientific Committee
Adjourn

Wednesday 8

W1 - Noise in Devices (II) (J. Mateos, Chair)

8:50-9:20 Unsolved problems of low frequency noise in GaN-based HFETs, Sergey Rumyantsev (keynote)
9:20-9:40 Mesoscopic modelling of depletion forces, Peter Kotelenetz (invited)
9:40-10:00 Upconversion as universal mechanism of noise transformation, Jevgenij Starikov (invited)
10:00-10:20 On a semiclassical theory of noise in Quantum Well Infrared Photodetectors, with a discrete set of recombination centers, Anna Carbone (invited)
10:20-10:40 Is it possible to suppress noise by noise in semiconductors?, Luca Varani (invited)
10:40-10:55 Noise simulation in MOSFETs under microwave irradiation, Enrico Prati (oral)
10:55-11:10 Noise in adaptable systems, Rogerio Enriquez Caldera (oral)

11:10-11:25 Coffee Break

W2 - Theoretical Frontiers on Noise and Fluctuations (II) (C. Doering, Chair)

11:25-11:55 Discussion on the validity of Langevin equation, Nico Van Kampen (keynote)
11:55-12:15 The uphill turtle race: how do nucleation rates depend on time? Henk Van Beijeren (invited)
12:15-12:35 Transport and diffusion on crystalline surfaces under external forces, Katja Lindenberg (invited)
12:35-12:55 Charge transport fluctuations in NEMS, Antti-Pekka Jauho (invited)
12:55-13:10 How does one describe a time-varying statistical spectrum:transforming random differential equations into phase-space Lorenzo Galeani (oral)

W3P - 13:10-15:15 Poster Session with Lunch Buffet

P1 – Topic - 8 Fluctuation models of irregular impedance networks, Akimov Vladimir

P2 - Topic - 8 Thermal Fluctuations of G Protein-Coupled Receptors: a Two Force-Constant Random Model, Alfinito Eleonora

P3 - Topic - 8 Noise properties of single open ion channels: a first principle based computational approach, Brunetti Rossella

P4 - Topic - 9 Transverse velocity fluctuations of hot electrons in n-type GaAs in crossed electric and magnetic fields by Monte Carlo methods, Ciccarello Francesco
P5 - Topic - 10 Abnormally low current noise in the NdFeBC nanostructured ceramics, Gerashchenko Oleg

P6 - Topic - 8 Noise-induced synchronization and desynchronization of self-sustained oscillators, Goldobin Denis

P7 - Topic – 7 How to measure a subdiffusion coefficient and a subdiffusion parameter, Kosztolowicz Tadeusz

P8 - Topic - 9 Transverse-mode noise simulation for isolation transformes, Marin Doina

P9 - Topic – 1 Multi-channel active noise control systems based on H control, Nasiri Alireza

P10 - Topic – 9 Investigation of longitudinal velocity fluctuations in MOSFETs by means of ensemble Monte Carlo simulation, Rengel Raoul

P11 - Topic - 3 The puzzle of shot noise suppression in a series of N tunnel barriers, Rosini Marcello

P12 - Topic - 8 Noise-Driven Switching between Limit Cycles and Adaptability in a Small-dimensional Excitable Network with Balanced Coupling, Safonov Leonid

P13 - Topic - 9 Shot noise spectrum cutt-off in Schottky-barrier diodes, Shiktorov Pavel

P14 - Topic - 1 Non-exotic theory of 1/f noise as a trace of infralow-frequency fluctuations, Shulman Alexander

P15 - Topic - 9 Effect of non-equilibrium term in two-particle correlation function on electron-phonon collision integrals, Shulman Alexander

P16 - Topic- 8 Brownian simulations and uni-direfational flux in diffusion, Singer Amit

P17 - Topic- 9 Noise in epitaxial HgCdTe films, Virt I.

P18 - Topic- 4 Strange dynamics of a non-isolated spin: resonances, Berry phase and geometric dephasing, Whitney Robert

15:45  Departure to Lecce:
   City Tour
   Social Dinner

Adjourn

Thursday 9

Th1 - Constructive Role of Noise  (D. Abbott, Chair)

9:50-10:10  Chemical peristalsis, Dean Astumian  (invited)
10:10-10:30  Switching of driven systems: activation or tunneling?, Mark Dykman (invited)
10:30-10:50  Activation energies for noise-induced transitions in overdamped systems on finite times: exact general solution, Riccardo Mannella (invited)
10:50-11:15 Coffee Break

Th2 - Noise in Complex Systems and Non-Gaussian Fluctuations (I) (C. Pennetta, Chair)

11:15-11:35 Large deviation functions in dissipative stationary states, Jean Farago (invited)
11:35-11:55 Nonlinear stochastic systems driven by Levy noise, Joseph Klafter (invited)
11:55-12:15 Large deviation techniques applied to systems with long-range interactions, Stefano Ruffo (invited)
12:15-12:30 Effect of non-Gaussian noise in small Josephson junctions, Rene Lindell (oral)
12:30-12:45 1/f Fluctuations at nonequilibrium phase transitions in heat and mass transfer transitions, Viatcheslav Skokov (oral)

12:45-15:30 Lunch

Th3 - Noise in Complex Systems and Non-Gaussian Fluctuations (II) (S. Ruffo, Chair)

15:30-16:00 Experimental results on the fluctuations in out of equilibrium systems, Sergio Ciliberto (keynote)
16:00-16:20 Attention predicting dynamics of complex stochastic systems, Vadim Smelyanskiy (invited)
16:20-16:40 Distribution of return periods of rare events in correlated time series, Cecilia Pennetta (invited)
16:40-17:00 Stochastic dynamics of anaesthesia, Peter Mcclintock (invited)
17:00-17:20 Absolute stability margin of nonequilibrium stationary systems, Andrew Snarskii (invited)

17:20-17:40 Coffee Break

Th4 - Noise in Biological Systems (II) (M. King, Chair)

17:40-18:10 Can electrical vestibular noise be used for the treatment of brain deseases? Yoshiharu Yamamoto (keynote)
18:10-18:30 Why doing zig-zag?, Udo Erdman (invited)
18:30-18:50 Are mean turning angles selected for survival of zooplankton?, Frank Moss (invited)
18:50-19:10 Inter-scale fluctuations in biological systems, Hans Liljenstrom (invited)
19:10-19:25 Role of noise in complex networks of Fitz-Hugh Nagumo neurons, Manuela LaRosa (oral)
19:25-19:40 Robustness vs redundancy in biological systems, Enrico Capobianco (oral)

Adjourn

Friday 10

F1 - Theoretical Frontiers on Noise and Fluctuations (III) (J. Bergou, Chair)

8:50-9:10 Fluctuations in electrohydrodynamic instabilities, Leone Fronzoni (invited)
9:10-9:30 Fluctuation-dissipation relations in systems with external drive, Giuseppe Gonnella (invited)
9:30-9:50 Why noise can serve as precursor of catastrophes, Pavel Shiktorov (invited)
9:50-10:05 Renewal, modulation and blinking quantum dots, Paolo Paradisi (oral)
10:05-10:20 Noisy harmonic oscillator: from Einstein till now, Moshe Gitterman (oral)

F2 - Noise in Biological Systems (III) (M. Tacano, Chair)
10:20-10:40 Memory, feedback, and noise, in neural systems, Benjamin Lindner (invited)
10:40-11:00 Single-molecule biochemical analysis using channel current cheminformatics, Stephen Winters-Hilt (invited)
11:00-11:20 Functional sub-conformations of protein molecules: Lessons from single channel experiments, Lisen Kullman (invited)

11:20-11:35 Coffee Break

F3 - Noise in Biological Systems (IV) (Y. Yamamoto, Chair)
11:35-11:55 1/f spectra: noise, chaotic dynamics, or phase coupled oscillators?, Aneta Stefanovska (invited)
11:55-12:15 Rhythm analysis of melodies used to win women marathon gold medal, Munecazu Tacano (invited)
12:15-12:30 Informative essence of chaos, Serge Timashev (oral)
12:30-12:45 Subdiffusion in a single protein molecule—generalized Langevin equation with fractional Gaussian noise, Samuel Kou (oral)
12:45-13:00 Randomness of amoeba movements, Hasiguchi Sumihisa (oral)

13:00-13:15 Closing and Remarks