

# Venice meeting on

# Fluctuations in small complex systems IV

Istituto Veneto di Scienze, Lettere ed Arti

Palazzo Franchetti, Venezia

14<sup>th</sup> to 18<sup>th</sup> October 2018

## PROGRAMME

Sunday, 14th October 2018

15:30 - 18:00	<b>Excursion</b> Guided tour through the city of Venice. We will start at Don Orione Artigianelli, the conference hotel.
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### Monday, 15<sup>th</sup> October 2018

8:45 – 9:00	<p><b>Opening remarks:</b></p> <p><b>Gherardo Ortalli</b> <i>President Istituto Veneto Scienze, Lettere, Arti</i></p> <p><b>Attilio Stella</b> <i>University of Padova and I.N.F.N. Padova</i></p> <p><b>Ralf Metzler</b> <i>University of Potsdam</i></p>
9:0 – 9:30	<p><b>Steve Granick</b> Enzymes are active matter</p>
9:30 - 10:00	<p><b>Daniela Kraft</b> Reconfigurable colloidal structures: from colloidal joints to flexible colloidal molecules</p>
10:00 - 10:30	<p><b>Diego Krapf</b> <math>1/f \beta</math> power spectral densities of individual trajectories</p>
10:30 – 11:00	<p style="text-align: center;"><b>Coffee Break &amp; Poster</b></p>
11:00 – 11:30	<p><b>Stefano Ruffo</b> Fluctuations in quantum measurements</p>
11:30 – 12:00	<p><b>Enrico Carlon</b> DNA elasticity beyond the Twistable Wormlike Chain</p>
12:00 – 12:30	<p><b>Denis Grebenkov</b> Strong defocusing of molecular reaction times: geometry and reaction control</p>
12:30 – 13:00	<p><b>Elizaveta Dubrovina - Phil Browu</b> Publishing with Nature Communications and Journal of Physics A</p>
13:00 – 14:30	<p style="text-align: center;"><b>Lunch break &amp; Poster</b></p>
14:30 – 15:00	<p><b>Marcin Magdziarz</b> Lamperti transformation - cure for ergodicity breaking</p>
15:00 – 15:30	<p><b>Christine Selhuber-Unkel</b> The phagocytic catch: Acanthamoeba in microstructured environments</p>
15:30 – 16:00	<p><b>Christian Beck</b> Superstatistical methods for complex systems: Some recent applications</p>
16:00 – 16:30	<p style="text-align: center;"><b>Coffee Break &amp; Poster</b></p>
16:30 – 17:00	<p><b>Ulrich Schwartz</b> Robust ligand discrimination by asymmetric receptor dimerization</p>
17:00 – 17:30	<p><b>Iva Tolic</b> new twist in the mitotic spindle</p>
17:30 – 18:00	<p><b>Matthieu Wyart</b> Complex landscapes in deep learning</p>
18:00 - 18:30	<p><b>Kathleen Stebe</b> Bacteria on fluid Interfaces</p>
20:00	<p style="text-align: center;"><b>Welcome party at San Trovaso Restaurant</b></p>

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# Tuesday, 16<sup>th</sup> October 2018

09:00 – 09:30	<b>Udo Seifert</b> From stochastic thermodynamics to thermodynamic inference
09:30 – 10:00	<b>Matthias Weiss</b> Active vs. thermal fluctuations in living cells
10:00 – 10:30	<b>Eli Barkai</b> Infinite ergodic theory for single molecule tracking in thermal setting
10:30 – 11:00	<b>Coffee Break &amp; Poster</b>
11:00 – 11:30	<b>Cristian Micheletti</b> Knotted DNA: conformational, dynamical and translocation properties
11:30 – 12:00	<b>Olga Dudko</b> Chromosome fluctuations in living cells
12:00 – 12:30	<b>Barbara Capone</b> Design of macromolecular building blocks: coarse graining, multiscale and theoretical predictions in material science
12:30 – 13:00	<b>Hye Yoon Park</b> Watching single endogenous mRNA in neurons in vivo
13:00 – 14:30	<b>Lunch &amp; Poster</b>
14:30 – 15:00	<b>Rina Schumer</b> Scale-free waiting times, reactions, and estimation
15:00 – 15:30	<b>Diogo Bolster</b> Incomplete mixing and reactions in porous media
15:30 – 16:00	<b>Stefan Egelhaaf</b> Anomalous diffusion due to an external potential, crowding and/or obstacles
16:00 – 16:30	<b>Coffee Break &amp; Poster</b>
16:30 – 17:00	<b>Stanislav Shvartsman</b> A simple model of clonal dominance
17:00 – 17:30	<b>Yael Roichman</b> Long range correlated motion of plasma membrane proteins
17:30 – 18:00	<b>Paolo De Los Rios</b> Non-equilibrium protein folding (and unfolding) in the cell
18:00 – 18:30	<b>Poster</b>

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# Wednesday, 17<sup>th</sup> October 2018

09:00 – 09:30	<b>Clemens Bechinger</b> Active Suspensions with Controlled Interaction Rules
09:30 – 10:00	<b>Pascal Viot</b> Stochastic and non-stochastic models of multi-channel particulate transport with blockage: similarities and discrepancies
10:00 – 10:30	<b>Olivier Bénichou</b> First-passage times of Markovian and non-Markovian random walkers
10:30 – 11:00	<b>Coffee Break &amp; Poster</b>
11:00 – 11:30	<b>Jacques Prost (*)</b> Emergence and resurgence in elementary contractile unit
11:30 – 12:00	<b>Elena Agliari (*)</b> Looking for collective features in leukocyte migration
12:00 – 12:30	<b>David Mukamel (*)</b> Absolute negative mobility in tracer dynamics
12:30 – 13:00	<b>Jeremy Smith (*)</b> Protein Dynamics and Drug Discovery
13:00	<b>Lunch &amp; Poster</b>
14:30 – 15:00	<b>Thomas Franosch</b> Non-equilibrium dynamics of active agents
15:00 – 15:30	<b>Marco Baiesi</b> Correlation between self-entanglement and amino acid sequence in proteins
15:30 – 16:00	<b>Lene Oddershede</b> Small fluctuations decisive for stem cell differentiation and organ development
16:00 – 16:30	<b>Coffee Break &amp; Poster</b>
16:30 – 17:00	<b>Hartmut Löwen</b> Passive and active colloidal particles in complex environments
17:00 – 17:30	<b>Fulvio Baldovin</b> Active particles, pressure equation, swarming and useful work
17:30 – 18:30	<b>Poster</b>

(\*) EPS Invited speakers

21:00 - 22:30	<b>Excursion</b> Guided nocturnal visit to St Mark's including the crypt and the Pala d'Oro.
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# Thursday, 18th October 2018

09:00 – 09:30	<b>Leonid Mirny</b> Active fluctuations in chromosomes
09:30 – 10:00	<b>Enzo Orlandini</b> Epigenetic dynamics and 3D organisation of chromatin domains
10:00 – 10:30	<b>Andrew Spakowitz</b> Physical Modeling of the Spreading of Epigenetic Modifications Through Transient DNA Looping
10:30 – 11:00	<b>Coffee Break &amp; Poster</b>
11:00 – 11:30	<b>Nikta Fakhri</b> Multiscale time reversal asymmetry reveals scale-dependent force fluctuations in biological active matter
11:30 – 12:00	<b>Anna Maciolek</b> Current-mediated synchronization of a pair of beating non-identical flagella
12:00 – 12:30	<b>Alberto Imparato</b> Autonomous thermal motors: duets and soloists
12:30 – 13:00	<b>Jae-Hyung Jeon</b> Anomalous diffusion in a chromosome-like random geometry
13:00 – 14:30	<b>Lunch break</b>
14:30 – 15:00	<b>Elisabeth Bouchaud</b> From flow to fracture through the sol-gel transition in colloidal systems
15:00 – 15:30	<b>Heiko Rieger</b> Non-equilibrium self-assembly of cholesteric colloids
15:30 – 16:00	<b>Aljaz Godec</b> Fast and precise reaction kinetics in the few-encounter limit
16:00 – 16:30	<b>Coffee Break</b>
16:30 – 17:00	<b>Felix Ritort</b> Experimental measurement of information-content in nonequilibrium systems
17:00 – 17:30	<b>Aleksei Chechkin</b> Brownian yet non-Gaussian diffusion in heterogeneous media
17:30 – 18:00	<b>Carlos Mejia-Monasterio</b> Random skating on ice disorder
18:00 – 18:30	<b>Closing remarks</b>

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### POSTER SESSION

<b>Erez Aghion</b> , Ramat Gan	<i>From Non-normalizable Boltzmann-Gibbs statistics to infinite-ergodic theory</i>
<b>Tomás Aquino</b> , Barcelona	<i>Chemical Continuous Time Random Walks</i>
<b>Michele Caraglio</b> , Leuven	<i>Diffusion and decay of torus knots in free open polymers</i>
<b>Sara Cerasoli</b> , Torino	<i>A nanoscale out-of-equilibrium gyrator: new insights on effective temperatures</i>
<b>Rajarshi Chakrabarti</b> , Mumbai	<i>Dynamics in active bath: from a single colloid to a polymer chain</i>
<b>Davide Colí</b> , Padova	<i>Magnetic Polymer Models for Epigenomic Organisation and Phase Separation</i>
<b>Ivan Di Terlizzi</b> , Padova	<i>Kinetic Uncertainty Relation</i>
<b>Gianmaria Falasco</b> , Luxembourg	<i>Nonequilibrium thermodynamics of chemical reaction networks</i>
<b>Felix Frey</b> , Heidelberg	<i>Stochastic dynamics of nanoparticle and virus uptake</i>
<b>David Hartich</b> , Göttingen	<i>Duality Between Relaxation and First Passage in Reversible Markov Dynamics</i>
<b>Rou Hou</b> , Potsdam	<i>Biased continuous-time random walks: facilitation of diffusion, ergodicity breaking and ageing</i>
<b>Mario Hidalgo-Soria</b> , Ramat Gan	<i>Effect of elastic colored noise in the hopping dynamics of single molecules in stretching experiments</i>
<b>Stefano Iubini</b> , Padova	<i>Topological Sieving of Rings According to their Rigidity</i>
<b>Giulia Janzen</b> , Torino	<i>Clustering of driven particles through a quiescent bath</i>
<b>Alessio Lapolla</b> , Göttingen	<i>Tagged Particle Histories in Single-File Diffusion: Exact Single- and Two-Tag Local Times Beyond Large Deviation Theory</i>
<b>Nicolas Moutal</b> , Palaiseau	<i>Diffusion-limited reactions in heterogeneous media</i>
<b>Amin Padash</b> , Potsdam	<i>First Passage Properties of Asymmetric Lévy Flights</i>
<b>Jintae Park</b> , Ulsan	<i>Realization of an artificial active bath with controlled activity</i>
<b>Giovanni Porta</b> , Milano	<i>Comparative assessment of continuum-scale models of bimolecular reactive transport model</i>
<b>Raya Sorkin</b> , Tel Aviv	<i>Membrane binding, bending and remodeling by calcium sensor proteins</i>
<b>Jakub Spiechowicz</b> , Katowice	<i>Subdiffusion via dynamical localization induced by thermal equilibrium fluctuations</i>
<b>Vittoria Sposini</b> , Potsdam	<i>On the first passage problem for Brownian yet non-Gaussian diffusion in heterogenous media</i>
<b>Stefano Steffenoni</b> , Leipzig	<i>The pressure of active particles</i>
<b>Fereydoon Taheri</b> , Heidelberg	<i>The effect of viscoelasticity on intracellular mobility</i>
<b>Samudrajit Thapa</b> , Potsdam	<i>Bayesian inference of single particle tracking data</i>
<b>Oleg Vasilyev</b> , Stuttgart	<i>Critical Casimir Interactions and Percolation: the quantitative description of critical fluctuations</i>