XV International Workshop on Complex Systems

Andalo, 17-20 March 2019

Programme
Sunday, 17 March

16.00

**OPENING**

Uli Buchenau

Chairman: Giulio Monaco

16.15

*From in-silico intuitions to experimental realizations with limited-valence DNA-made nanoparticles*

Francesco Sciortino

16.35

*Non-equilibrium phase transitions in driven Brownian motion*

Philipp Maass

16.55

*Heterogeneous local order in soft matter systems studied by X-ray cross correlation methods*

Felix Lehmkühler

17.15

*Short-time dynamics of confined colloids probed by high-energy coherent X-rays*

Federico Zontone

17.30

*Phase behaviour and rheology of multi-responsive soft microgels*

Roberta Angelini

17.45

*Anomalous Dynamics of Concentrated Silica-PNIPAm Nanogels*

Lara Frenzel

18.00 – 18.20

**Coffee Break**
Chairman: Walter Kob

18.20  
**Structure and dynamics of ionic liquids and other highly concentrated electrolytes**  
Aleksandar Matic

18.40  
**Non-equilibrium phase transitions in driven Brownian motion**  
Stefano Mossa

19.00  
**Learning Transmission Matrices in Complex and Random Media**  
Luca Leuzzi

19.20  
**Anomalous transport in soft percolating host structures**  
Charlotte Petersen

19.35  
**Influence of deposition temperature and impurities on the refractive indices of thin films of methanol and ethanol**  
Dmitriy Sokolov

20.15

**Dinner**

21.15

**Poster session**
Monday, 18 March

Morning

Chairman: Uli Buchenau

8.30
The Glass Transition: Can new data shed light on which Interpretation we should believe?
Patrick C. Royall

8.50
Theory for swap acceleration near the jamming and glass transitions
Matthieu Wyart

9.10
Interference between the glass, gel, and gas-liquid transitions
Magdaleno Medina-Noyola

9.30
Multi-scale relaxation in aging gels: from localized plastic events to system-spanning "quakes"
Roberto Piazza

9.45
Influence of wall heterogeneity on polymer nano-sandwiches
Raffaele Pastore

10.00
Measuring intensity correlation length in the bulk of a strongly scattering material
Marco Leonetti

10.15 – 10.45

Coffee Break
Chairman: Josep Lluis Tamarit

10.45  
On the structure of liquids: More order than expected  
Walter Kob

11.05  
A microscopic picture of the atomic motion during polyamorphism in an ultra-viscous liquid  
Beatrice Ruta

11.25  
Connecting dynamics and structure in disordered materials with machine learning  
Tristan A. Sharp

11.45  
Vitrification kinetics versus atomic mobility in a metallic glass former  
Isabella Gallino

12.00  
Origin of the X-ray beam induced dynamics in oxide glasses  
Francesco Dallari

12.15  
Breakdown of the Arrhenius Law in the Normal Liquid State  
Andrzej Grzybowski

12.30 – 16.00  

Lunch Break
Afternoon

Chairman: Simone Capaccioli

16.00
The yielding transition of soft colloids
Luca Cipelletti

16.20
Dynamical behaviour of soft IPN microgels
Barbara Ruzicka

16.40
Long-wavelength fluctuations and anomalous breakdown of the Stokes-Einstein relation in two dimensions
Massimo Pica Ciamarra

17.00
Evidence of a low temperature dynamical transition in concentrated microgels
Marco Zanatta

17.15
The microscopic role of deformation in the dynamics of soft colloids
Nicoletta Gnan

17.30
Microscopic pathways for stress relaxation in repulsive colloidal glasses
Alessandro Martinelli

17.45 – 18.05

Coffee Break
Chairman: Alexander Chumakov

18.05
New understanding of collective modes and thermodynamics of the liquid and supercritical states
Kostya Trachenko

18.25
"Static" Shear-Elasticity in Liquids & Melts
Laurence Noirez

18.45
Origin of boson peak in ordered crystals and amorphous solids
Alessio Zaccone

19.05
Boson peak and fracton in glass and single crystal probed by terahertz spectroscopy
Tatsuya Mori

19.20
Low energy vibrations, thermal transport and anharmonicity in ordered and disorder solids
Giovanna D'Angelo

20.15

Dinner

21.15

Poster session
Tuesday, 19 March

Morning

Chairman: Stephen Elliott

8.30
Fluctuating elasticity fails to capture sound damping in glasses
Anaël Lemaître

8.50
How universal are "universal" anomalous properties of glasses at low temperatures?
Miguel Angel Ramos

9.10
Long-range stress correlations in viscoelastic and glass-forming fluids
Alexander Semenov

9.30
Elasticity of Colloidal Systems by Video Microscopy Method
Deniz Kaya

9.45
Glass transition in ultrastable glasses: Analyzing the bulk transformation.
Ana Vila-Costa

10.00
The Impact of the Dipole Moment on the Crystallization Tendency of the Van Der Walls Liquids
Kajetan Koperwas

10.15 – 10.45

Coffee Break
Chairman: Giuseppe Carini

10.45
Investigating the Anomalous Properties of Pressure-Densified Glasses
Adam P. Holt

11.05
Pressure-induced densification of vitreous silica: insight from elastic properties
Benoit Rufflé

11.25
Reducing the atomic two-level tunneling states in dielectric thin films
Xiao Liu

11.45
Is glycerol a good fruit fly of the glass community?
Tina Hecksher

12.00
Anomalous Magnetism of Non-Magnetic Glasses
Giancarlo Jug

12.15
Self-Assembling of Lysozyme: Microscopic and Macroscopic investigations
Sara Catalini

12.30 – 16.30

Lunch Break
Afternoon

Chairman: Kia L. Ngai

16.00
Glassy features in translationally-ordered low-temperature halomethane crystals
Josep Lluis Tamarit

16.20
A new complex system: alpha-iron
Aleksandr Chumakov

16.40
Non-hydrodynamic modes in collective dynamics of liquids
Taras Bryk

17.00
Experimental evidence for a state-point dependent density-scaling exponent of liquid dynamics
Alejandro Sanz

17.15
Rheology of Glass-forming Liquids as a Probe of the Energy Landscape
Sabyasachi Sen

17.30
Rejuvenation of a polymer melt after shear thinning and thermal jumps
Andrea Giuntoli

17.45 – 18.05

Coffee Break
Chairman: Emanuela Zaccarelli

18.05
Dynamic density shaping of photokinetic E. coli
Claudio Maggi

18.25
Inverse modeling bacterial growth
Andrea De Martino

18.45
Systematic and non-uniform coarse-graining of biomolecules
Raffaello Potestio

19.05
Effect of dilution in asymmetric recurrent neural networks
Viola Folli

19.20
Phase Transitions in the Self-Organization of Neural Rosettes
Giorgio Gosti

20.15

Social dinner
Wednesday, 20 March

Morning

Chairman: Giancarlo Ruocco

8.30
Field-cycling NMR relaxometry: A powerful tool for studying viscous liquids and polymers
Ernst Rössler

8.50
Complex local and glass transition dynamics in PA12 studied by broadband dielectric spectroscopy - What can we learn from hydration experiments?
Michael Wübbenhorst

9.10
Caged dynamics below the glass transition: connection to JG beta-relaxation
Simone Capaccioli

9.30
Watching structural dynamics in complex systems by tunable UV Resonant Raman scattering: from liquids to bio-systems
Barbara Rossi

9.45
Multimodal character of shear viscosity response in some hydrogen bonded liquids
Silvia Arrese-Igor

10.00
Deviations of dynamic parameters in glass forming alkyl phosphates
Manoj Kumar Saini

10.15 – 10.45

Coffee Break
Chairman: Luca Leuzzi

10.45
**Simulation of structural relaxation and glass transitions in d-sorbitol**
Stephen R. Elliott

11.05
**Toward better understanding of the density scaling law**
Marian Paluch

11.25
**Glass Transition and Lack of Equipartition in a Statistical Mechanics model of Random Lasers**
Giacomo Gradenigo

11.45
**Laser Induced Nucleation in Supersaturated Aqueous KCl Solutions**
Renato Torre

12.05
**A microscopic look at the Johari-Goldstein relaxation in a hydrogen-bonded liquid**
Federico Caporaletti

12.20
**Possible universal relation between short time \(\beta\)-relaxation and long time \(\alpha\)-relaxation in glass-forming liquids**
Rajsekhar Das

12.35 - 16.30

**Lunch Break**
Afternoon

Chairman: Marian Paluch

16.00
**Slow dynamics of supercooled hydration water in biosolutions**
Paola Gallo

16.20
**Kosmotrope and Chaotrope Salts Influence on Water Structural Relaxation and hydrogen Bond Dynamics Investigated by Coherent Quasielastic Neutron Scattering**
Antonio Faraone

16.40
**Liquid and Solid Polyamorphism of Water: Recent Simulations and Experiments**
Philip H. Handle

17.00
**Reduced dielectric response of water on the nanoscale**
Jasper Schmidt Hansen

17.15
**Dynamics of water and related H-bonded liquids**
Catalin Gainaru

17.30
**Hydrogen order and disorder in a high-pressure phase of H$_2$O ice: Ice VI**
Tobias M. Gasser

17.45

**Conclusive remarks**
Kia L. Ngai
Posters

The EXP pair-potential system
Andreas Bacher

Effect of optical phonons on the vibrational spectrum and on the low-T specific heat of solids
Matteo Baggioli

Structural dynamics of hydrogen-bond in ionic liquids-water mixtures
Cettina Bottari

Eshelby description of highly viscous flow
Uli Buchenau

Multiscale modelling and Scaling Theories for Polymer Brushes
Barbara Capone

Micro-eV Vibrational Dynamics in amorphous SiO₂
Federico Caporaletti

Enhancing the molecular cooperativity of polyvinyl butyral using liquid additives
Giuseppe Carini

Hydration of the tripeptide Glutathione probed by UV Raman Spectroscopy
Sara Catalini

General methodology to identify the minimum alphabet size for heteropolymer design
Ivan Coluzza

Designing an optimal ion adsorber at the nanoscale: the unusual nucleation of AgNPs/Co2+-Ni2+ binary mixtures
Pietro Corsi

Revisiting the Stokes-Einstein relation without a hydrodynamic diameter
Lorenzo Costigliola

Relation between Fractal dimension and Topological invariants to evaluate complexity in abstract images
Elsa de la Calleja
The Supercooled State of Glass-forming Liquids
Jonathan Said Lira-Escobedo

Trehalose Protectant Activity for peptide hydration
Michael Di Gioacchino

Multi-component glasses and their suitability for nuclear waste encapsulation
Oliver Dicks

Hidden scale invariance in liquid CuZr
Laura Friedeheim

A compact device for simultaneous dielectric spectroscopy and gravimetric analysis using quartz crystal microbalance under controlled humidity
Alessia Gennaro

Molecular dynamics of binary mixtures of ibuprofen with octaacetylmaltose near the glass transition
Katarzyna Grzybowska

Mathematical modeling of polymeric materials: Finsler geometry models and Monte Carlo simulations
Hiroshi Koibuchi

Evolution of properties of thin film mixtures of hydrogen-bonded molecules at low temperatures
Alexandra Kolomiitseva

RUMD: A general purpose molecular dynamics package optimized to utilize GPU hardware down to a few thousand particles
Heine Larsen

Following the behavior of the linear viscoelasticity on arrested spinodal decomposition
Leticia López-Flores

Estimation of effective brain connectivity using a recurrent neural network model on magnetoencephalography data
Edoardo Milanetti

An exploration–exploitation tradeoff dictates the optimal distribution of phenotypes for populations in presence of fitness fluctuations
Mattia Miotto
Low-temperature specific heat of glasses and disordered solids
Manuel Moratalla Martín

Can one afford to overlook the fundamental role of the JG b-relaxation?
Kia Ngai

FEL approach to aging phenomena
Takashi Odagaki

Latent arrested spinodal decomposition and interference between the glass, gel,
and gas-liquid transitions
José Manuel Olais-Govea

The non-Debye spectrum in structural glasses and supercooled liquids
Matteo Paoluzzi

Study of the Connection of Disorder and Energy Landscape in Glasses Using
Hyperaged Amber
Eva Arianna Aurelia Pogna

Structure and Self-Assembly of Biomolecules
Anastassia Rissanou

Polymer Graphene nanostructured materials: An atomistic simulation study
Anastassia Rissanou

Kinetics aspects of the formation of quasicrystals
Leandro Rizzi

On the viscoelastic response of semiflexible networks
Leandro Rizzi

Dynamical properties of magnetic granular matter analyzed by DDM
Manuel de Jesús Sánchez Miranda

Simultaneous dielectric and neutron spectroscopy. Isochronal superposition, an
isomorph test
Alejandro Sanz

EXAFS and Reverse Monte Carlo analysis to reveal the anomalous behavior of
Nb3Sn in temperature and pressure
Irene Schiesaro
Mode-coupling theory of the glass transition for colloidal liquids
Lukas Schrack

Brillouin scattering of nanoparticles and their aggregates in phononic crystals. Size dependent Tg
Maria Secchi

Overcharging and reentrant condensation of thermoresponsive ionic microgels
Simona Sennato

Predicting Scaling Properties From Individual Configuration
Zahraa Sheydaaefar

Gluonic and Regulatory Solvents: From Con-Nonsolvency in Polymers to RNA-droplets
Jens-Uwe Sommer

Engineering of frustration in colloidal artificial ices realized on microfeatured grooved lattices
Pietro Tierno

Time correlation functions of simple liquids: A new insight on the underlying dynamical processes
Renzo Vallauri

In silico modelling of microgel particles
Emanuela Zaccarelli
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