

# I Conference of the Italian Society of Statistical Physics

XXV National Conference on Statistical Physics and Complex Systems

June 23rd-25th 2021  
Online Conference

WEDNESDAY, JUNE 23<sup>rd</sup> 2021

14:15 - 14:30

## Opening

*Chair:* Roberto Livi

14:30 - 15:10

Herbert Spohn - *Technical University Munich*

**Hydrodynamic equations for integrable many-body systems: The case of the classical Toda lattice**

15:10 - 15:30

Massimo Cencini - *Istituto dei Sistemi Complessi (CNR)*

**Learning to hide and seek at low Reynolds number**

15:30 - 15:50

Paolo De Los Rios - *Institute of Physics and Institute of Bioengineering, EPFL*

**The non-equilibrium nature of thermophoresis**

15:50 - 16:10

## Coffee Break

*Chair:* Ginestra Bianconi

16:10 - 16:50

## Ignite talks

L. Buffoni - *The Thermodynamics of Quantum Annealers*

A. Gopal - *Energetics of critical oscillators in active bacterial baths*

S. Kundu - *Breakdown of universality in random sequential adsorption in the presence of spatially long-range correlated disorder*

G. De Marzo - *Dynamical approach to Zipf's law*

E. Lippiello - *An objective criterion for cluster detection in stochastic epidemic models*

S. Miccichè - *Global network connectivity and critical percolation thresholds in the supervised air traffic socio-technical complex systems*

C. Lucibello - *Reconstruction of Pairwise Interactions using Energy-Based Models*

D. Alberici - *A random deep Boltzmann machine: analytic results about the replica symmetric phase*

16:50 - 17:10

## Coffee Break

*Chair:* Irene Giardina

17:10 - 17:50

Giacomo Livan - *University College London*

**Leveraging academic networks to understand scientific impact**

17:50 - 18:10

Maria Chiara Angelini - *Sapienza Università di Roma*  
**Loop expansion around the Bethe solution for disordered models**

18:10 - 18:30

Diego Garlaschelli - *IMT School of Advanced Studies, Lucca*  
**Multiscale network renormalization: scale-invariance without geometry**

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THURSDAY, JUNE 24<sup>th</sup> 2021

10:00 - 12:30

## Poster Session I - Rooms 1-5

**Room 1** (Chair: G. Gradenigo) - A. Bastianello, G. Di Fresco, R. Franzosi, A. Santini & A. Solfanelli

**Room 2** (Chair: A. Vezzani) - F. Baroni, M. Delvecchio, F. Mambretti, L. Rossi

**Room 3** (Chair: A. Pelizzola) - M. Becchi, L. E. Coronas & G. Franzese, A. Lamura, L. Puggioni

**Room 4** (Chair: A. Sarracino) - C. Campajola, M. D'Achille, D. Notarmuzi, A. Perinelli, T. Radicioni

**Room 5** (Chair: M. Baiesi) - F. Borra, D.M. Busiello, H. Christiansen, G. Giachetti, M. Pretti

12:30 - 14:30

## Lunch

*Chair:* Achille Giacometti

14:30 - 15:10

**Emanuela Del Gado** - *Institute for Soft Matter Synthesis and Metrology, Georgetown University*

### The physics of cement cohesion

15:10 - 15:30

**Andrea Gamba** - *Politecnico di Torino*

### Optimality in Self-Organized Molecular Sorting

15:30 - 15:50

## Coffee Break & Poster Session

*Chair:* Francesca Colaiori

15:50 - 16:10

**Anna Paola Muntoni** - *Italian Institute for Genomic Medicine - Politecnico di Torino*

### Epidemic mitigation by statistical inference from contact tracing data

16:10 - 16:30

**Claudio Castellano** - *Istituto dei Sistemi Complessi (ISC-CNR)*

### Eigenvector localization of the adjacency and non-backtracking matrices in complex networks

16:30 - 16:50

**Pierpaolo Vivo** - *King's College London*

### Rankings and Mean First Passage Time in complex networks: a unified framework

16:50 - 17:10

## Coffee Break & Poster Session

17:10 - 18:30

**Assemblea dei Soci della Società Italiana di Fisica Statistica - SIFS**

Durante questa sessione avrà luogo l'Assemblea dei Soci della SIFS, riservata ai soci della Società.

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FRIDAY, JUNE 25<sup>th</sup> 2021

10:00 - 12:30

## Poster Session II - Rooms 7-11

Room 6 (Chair: S. Lepri) - I. Amelio, D. De Santis, A. Lerose, F. Petziol, C. Vanoni

Room 7 (Chair: S. Bianco) - M. Conte, L. Kocillari, T. Skrbic, A. Plati

Room 8 (Chair: F. Corberi) - M. Di Vece, M. Mancastroppe, N. Zagli, A. Somazzi

Room 9 (Chair: F. Ginelli) - M. Buzzicotti, F. Caravelli, A. Galvani, F. Mattiotti, T. Squartini

12:30 - 14:30

## Lunch

*Chair: Pasquale Calabrese*

14:30 - 15:10

Jorge Kurchan - *Laboratoire de Physique de l'Ecole Normale Supérieure, ENS*

**An unexpected bridge between Black Holes and glasses**

15:10 - 15:30

Pierfrancesco Urbani - *Université Paris-Saclay, CNRS, CEA, Institut de physique théorique, France*

**Isostatic locking and marginally stable glasses**

15:30 - 15:50

## Coffee Break & Poster Session

*Chair: Giuseppe Gonnella*

15:50 - 16:10

Antonio Celani - *ICTP*

**Gone with the wind: learning how to use kites for energy harvesting**

16:10 - 16:30

Vittoria Sposini - *University of Vienna*

**The random diffusivity approach for diffusion in heterogeneous systems**

16:30 - 16:50

Malte Henkel - *LPCT, Universite de Lorraine Nancy, France*

**Meta-conformal invariance in biased Ising models**

16:50 - 17:10

## Coffee Break & Poster Session

17:10 - 18:30

**Round Table discussion - "Machine Learning and Big Data"**

E. Aurell, F. Giannotti, R. Sabatini, M. Weigt, R. Zecchina