

# INHOMOGENEOUS RANDOM SYSTEMS

## *Systèmes Aléatoires Inhomogènes*

January 24-25, 2023

Institut Curie & Institut Henri Poincaré (also online)  
11-13 rue Pierre et Marie Curie, Paris

Tuesday 24 January: Institut Curie, Amphithéâtre Curie

### **Point processes and statistical mechanics**

Moderator: **Alessandra Faggionato (Roma)**

- 9h00 – 9h10 : Opening
- 9h10 – 10h00 : **Alessandra Faggionato (Roma)**: *Random resistor networks on simple point processes and Mott's law.*
- 10h00 – 10h50 : **Martin Huesmann (Münster)**: *Fluctuations of the displacement in the optimal matching problem.*
- 10h50 – 11h15 : Coffee Break
- 11h15 – 12h05 : **Sabine Jansen (München)**: *Large deviations and distribution of cracks in a chain of atoms at low temperature.*
- 12h05 – 13h30 : Lunch Break
- 13h30 – 13h55 : **Thierry Bodineau (Bures-sur-Yvette), Giambattista Giacomin (Paris), Dasha Loukianova (Evry)**: *A tribute to Francis Comets.*
- 14h00 – 14h50 : **Frank den Hollander (Leiden)**: *Metastability for the Widom-Rowlinson model with grains of general shape.*
- 14h50 – 15h40 : **Raphaël Lachièze-Rey (Paris)**: *Percolation of random fields excursions.*
- 15h40 – 16h05 : Coffee Break
- 16h05 – 16h55 : **Giovanni Peccati (Luxembourg)**: *Functional inequalities on the Poisson space, via stopping sets and two-scale stabilization.*
- 16h55 – 17h45 : **Antoine Gloria (Paris & Bruxelles)**: *On Einstein's effective viscosity formula.*

Wednesday 25 January: Institut Henri Poincaré, Amphithéâtre Hermite

### **Free probability, between maths and physics**

Moderator: **Jorge Kurchan (Paris)**

- 9h00 – 9h10 : Opening
- 9h10 – 9h30 : **Jorge Kurchan (Paris)**: *Introduction.*
- 9h30 – 10h20 : **Roland Speicher (Saarbrücken)**: *Free probability and free cumulants.*
- 10h20 – 10h45 : Coffee Break
- 10h45 – 11h35 : **Frédéric Patras (Nice)**: *Algebraic structures underlying free probability.*
- 11h35 – 12h25 : **Alice Guionnet (Lyon)**: *Matrix models at low temperature.*
- 12h25 – 13h45 : Lunch Break
- 13h45 – 14h35 : **Denis Bernard (Paris)**: *The Quantum SSEP and the emergence of free probability in many-body mesoscopic quantum systems.*
- 14h35 – 15h25 : **Laura Foini (Saclay)**: *Eigenstate Thermalization Hypothesis and Free Probability.*
- 15h25 – 15h50 : Coffee Break
- 15h50 – 16h40 : **Marc Potters (Paris)**: *Free probabilities in action: the spectral method for phase retrieval.*
- 16h40 – 17h30 : **Jean-Philippe Bouchaud (Paris)**: *Covariance stability & eigenvector overlaps : a (free) RMT approach.*

Informations and abstracts at: <http://irs.math.cnrs.fr>

## Registration:

The conference is free and open to all.

To facilitate local organization and to receive a connection link, please register in advance by sending an e-mail **before January 17** with your name, affiliation, mail address and your choice to be on site or online, to:

**inter@math.cnrs.fr** with subject: **IRS 2023**

Giambattista Giacomini  
Mathématiques, LPSM  
Université Paris Cité

Christian Maes  
Theoretische Fysica  
KU Leuven, Belgium

Ellen Saada  
Mathématiques, MAP5  
CNRS & Université Paris Cité

*Partially supported by CNRS, Université Paris Cité and KU Leuven.*