

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

The aim of this annual workshop is to bring together mathematicians and physicists working on disordered or random systems, and to discuss recent developments on themes of common interest. Each of the two days is devoted to a specific topic; the 2023 session is planned as follows.

Tuesday 24 January:

Point processes and statistical mechanics.

Moderator: Alessandra Faggionato (Roma)

Nontrivial geometrical patterns emerge in many areas of science and technology and a fundamental tool for their modeling is provided by point processes. Their zoology is very rich and a central role is played by the Poisson point process. The workshop aims at presenting recent results on point processes both of theoretical nature (analysis, geometry and probability) and more applied ones, notably in the direction of statistical mechanics and material science.

There will also be a moment in memory of our friend and colleague Francis Comets.

Speakers: Alessandra Faggionato (Roma), Antoine Gloria (Paris & Bruxelles), Frank den Hollander (Leiden), Martin Huesmann (Münster), Sabine Jansen (München), Raphaël Lachièze-Rey (Paris), Giovanni Peccati (Luxembourg).

Wednesday 25 January:

Free probability, between maths and physics.

Moderator: Jorge Kurchan (Paris)

Free probability is a flourishing field in probability theory. It deals with non-commutative random variables where one introduces the concept of “freeness” in analogy to “independence” of commuting random variables. On the mathematical side, it has given new tools and a deeper insight into, amongst others, the field of random matrices. On the physics side, it has recently appeared naturally in the context of quantum chaos, where all its implications have not yet been fully worked out.

Speakers: Denis Bernard (Paris), Jean-Philippe Bouchaud (Paris), Laura Foini (Saclay), Alice Guionnet (Lyon), Frederic Patras (Nice), Marc Potters (Paris), Roland Speicher (Saarbrücken).

The conference and online participation are free and open to all. To facilitate local organization, please register in advance by sending an e-mail with your name, affiliation, mail address, and your choice to be on site or online, to:

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

You may also consult the conference web page at: **<http://irs.math.cnrs.fr>**

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