

INHOMOGENEOUS RANDOM SYSTEMS

Systèmes Aléatoires Inhomogènes

January 28-29, 2025

Institut Henri Poincaré
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 2025 session is planned as follows.

Tuesday 28 January:

Spin glasses and related topics.

Moderator: Jean-Christophe Mourrat (Lyon)

Spin glasses are models of statistical mechanics characterized by disordered interactions and complex energy landscapes. They serve as fundamental examples of complex systems, providing insights into various scientific fields. This event will bring together different perspectives from mathematics, physics, and computer science, showcasing recent developments and promising research directions.

Speakers: Leticia Cugliandolo (Paris), Brice Huang (Boston), Antoine Maillard (Paris), Rémi Monasson (Paris), Guilhem Semerjian (Paris), Eliran Subag (Rehovot), Pierfrancesco Urbani (Saclay).

Wednesday 29 January:

Ergodicity-breaking phenomena in quantum mechanics.

Moderator: Wojciech De Roeck (Leuven)

Experimental marvels like cold atoms are allowing us to probe many-body Hamiltonian dynamics in a very detailed way, bringing into focus questions that might have seemed almost philosophical in earlier decades. One of the surprises from these experiments is that such systems often fail to thermalize. Phenomena like ‘localization’, ‘quantum scars’ and various types of glassy behaviour are ubiquitous in these simple quantum systems, whereas they do not seem so common in condensed matter platforms. This day brings together several specialists from this field.

Speakers: Marin Bukov (Dresden), François Huveneers (London), Andrea De Luca (Cergy), David Luitz (Bonn), Markus Müller (Vienna), Silvia Pappalardi (Koeln), Simone Warzel (München).

The conference is free and open to all. To facilitate local organization, **please register in advance** by sending an e-mail with your name, affiliation, mail address, to:

inter@math.cnrs.fr with subject: **IRS 2025**

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

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