



The Galileo Galilei Institute for Theoretical Physics Arcetri, Florence

Randomness, Integrability and Universality

Apr 19, 2022 - Jun 03, 2022

Recent times have witnessed remarkable developments in the study and applications of exactly solvable models of statistical mechanics. Just to mention a few: random surfaces and limit shape phenomena; inhomogeneous quantum quenches and stochastic growth processes; integrability in gauge fields and strings; the rigorous characterization of Kardar-Parisi-Zhang universality class. Dimer models, the six-vertex model, interacting particle systems, and random matrix theory were instrumental for this progress.

The purpose of this seven week program is to bring together theoretical physicists and mathematicians with expertise in low dimensional quantum field theory and statistical mechanics, integrable systems, gauge and string theories, analysis, probability theory, random matrix theory, and combinatorics, to increase cross-fertilization and boost further advances in the field.

Topics:

- Limit shape phenomena
- Random matrices, determinantal processes and KPZ universality class
- Quantum integrability and correlation functions
- Integrable quantum dynamics
- Lattice models and combinatorics
- Integrability in gauge and string theories

Organizing Committee:

Filippo Colomo (INFN, Florence)
Jan de Gier (The University of Melbourne)
Philippe Di Francesco (University of Illinois, Urbana and CEA, Saclay)
Nicolai Reshetikhin (University of California, Berkeley)
Didina Serban (CEA, Saclay)
Herbert Spohn (Technische Universität München)

Contact persons: colomo@fi.infn.it