

Random Matrices, Random Graphs and Statistical Physics for Machine Learning and Inference

16 - 20 May 2022
An ICTP Hybrid Meeting
Trieste, Italy



Further information:
<http://indico.ictp.it/event/9797/>
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This school on random matrices and graphs, machine learning and statistical physics will emphasize the strong connections between these fields, strengthen the analytical toolbox of the students and provide a modern vision of the challenges in high-dimensional statistics.

Description:

Inference and learning systems have been studied for decades. But the richness of contemporary high-dimensional statistical models (deep neural networks, community detection and inference on graphs, tensor factorization etc) require novel ideas and analytical methods. In particular, blending methods from random matrix theory, statistical physics and information theory is particularly promising. The school aims at providing an overview of recent progresses in this interdisciplinary field by worldwide experts coming from different backgrounds, but who all share a common goal of better modelling complex systems processing large datasets, and understanding their fundamental and algorithmic limitations.

Topics:

- High-dimensional statistics
- Random matrix theory
- Statistical physics
- Information theory
- Theoretical machine learning
- Graph theory

Directors:

S. PÉCHÉ, Université Paris, France
V. PERCHET, CREST, ENSAE, France
J. BARBIER, ICTP, Italy

Local Organiser:

J. BARBIER, ICTP, Italy

Lecturers:

C. MALE, Bordeaux University, France
L. MASSOULIÉ, INRIA Paris, France
M. LELARGE, INRIA Paris & Ecole Polytechnique, France
M. POTTERS, Capital Fund Management, France
P. VIVO, King's College London, UK

How to apply:

Online application:
<http://indico.ictp.it/event/9797/>

Female scientists are encouraged to apply.

Grants:

A limited number of grants are available to support the attendance of selected participants.
There is no registration fee.

Deadline:

1 April 2022

