

London Mathematical Laboratory Summer School



5 - 30 July 2021
An ICTP Virtual Meeting
Trieste, Italy

Further information:
<http://indico.ictp.it/event/9545/>
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The London Mathematical Laboratory (LML) is pleased to announce its 2021 Summer School. The School engages postgraduate students for a period of four weeks on research projects under the supervision of active research scientists.

Director:

I. PÉREZ CASTILLO, Universidad Autónoma Metropolitana, Mexico

Local Organiser:

M. MARSILI, ICTP, ITALY

Description:

Each project addresses one or more open questions in order to expose students to the frontier of scientific cross-disciplinary research in several fields (statistical physics, systems ecology, quantitative economics, dynamical systems, information and large deviation theory, and neural networks). This provides a first-hand experience of "research in action", where asking the right questions is at least as important as finding the right answers. Many previous students have found this a life-changing experience that transformed their view of science as an activity and as a possible career. The list of projects is available at <http://indico.ictp.it/event/9545/>

Supervisors include LML Fellows and colleagues from the ICTP and the International School for Advanced Studies (SISSA). Students will also attend a series of scientific lectures and a scientific writing course, and the School will culminate with student presentations of their research.

Projects:

1. Stability of ecosystems with a core-periphery structure
2. The evolution of income or wealth distribution with higher order autoregressive processes
3. Exploring the Connections between Information Theory and Ergodicity Economics Through the Lens of Inequality Measurement
4. Growth incidence curves in reallocating geometric Brownian motion
5. Optimal allocation and risk parity
6. Time-average based saving versus Ensemble-average based saving and the evolution of wealth distribution
7. Learning random dynamical systems from data
8. Explainability and rationalization in decision theory: a coding theory approach
9. Beyond Rational Herding
10. Verifying interaction among different types of discrete events by using the multivariate Hawkes process
11. Anomalous diffusion in random dynamical systems
12. The trade-off between profit and time constraints and market impact
13. Large deviation theory in diluted random matrices
14. Tackling Quantum Many-Body Systems with Artificial Neural Networks
15. Experiments in ergodicity
16. Epidemic spreading models in the presence of feedback

Project Supervisors:

A. ADAMO, London Mathematical Laboratory, UK
Y. BERMAN, London Mathematical Laboratory, UK
J. BHASEEN, King's College London, UK
F. CACCIOLI, University College London, UK
I.P. CASTILLO, Universidad Autónoma Metropolitana, Mexico
D. DE MARTINO, Biofisika Institute - Ikerbasque, Spain
J. GRILLI, ICTP, Italy
O. HULME, Copenhagen University Hospital Hvidovre, Denmark
R. KANBUR, Cornell University, USA
M. KIRSTEIN, London Mathematical Laboratory, UK
R. KLAGES, Queen Mary University of London, UK
J. LAMB, Imperial College, UK
S. LUZZATTO, ICTP, Italy
M. MARSILI, ICTP, Italy
L.F. METZ, Federal University of Rio Grande do Sul, Brazil
O. PETERS, London Mathematical Laboratory, UK
S. RUFFO, SISSA, Italy
Y. SATO, Hokkaido University, Japan
M. WERNER, University of Bristol, UK
J. ZHUANG ISM, Japan

How to apply:

Online application:
<http://indico.ictp.it/event/9545/>

Female scientists are encouraged to apply.

Registration:

There is no registration fee.

Grants:

London Mathematical Laboratory intends to provide a grant of 500 EUR to all selected participants. Further information will be provided in due course.

Deadline:

30 April 2021



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Unidad Iztapalapa



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