



ÉCOLE DE PHYSIQUE DES HOUCHES



Summer School on The New Mechanics

Session CXX

August 1st - 26th, 2022

Organizers:

Pierre-François COHADON (ENS Paris), **Hubert KRENNER** (University of Münster)
and **Pierre VERLOT** (Institut Universitaire de France)

Overview:

Ultra-sensitive mechanical measurements have experienced a huge development over the last 30 years, taking advantage of new micro/nanofabrication technologies and new detection techniques. Such measurements are now at the core of a huge spectrum of research in both applied and fundamental physics, such as gravitational-wave detection, atomic force microscopy, quantum measurement theory, equilibrium and out-of-equilibrium statistical physics, biomechanics... The school will give a thorough and exhaustive vision of the field.

Website: <https://houchesnewmech.sciencesconf.org/>

Topics:

Measurement of Fundamental forces
Gravitational Decoherence of Mesoscopic Systems
Quantum Thermodynamics
Equilibrium and Out-of-Equilibrium Statistical Physics
Atomic Force Microscopy
Mechanical measurements in Biophysical Systems
Nanomechanics with Hybrid Systems
Surface Acoustic Wave devices
Nonlinear Mechanics
Mechanics with Superfluid Helium
Levitating Optomechanical Systems

First confirmed lecturers:

Alexia Auffèves (Institut Néel, Grenoble)
Sergio Ciliberto (ENS Lyon)
Mark Dykman (Michigan SU)
Jack Harris (Yale)
Ania Jayich (UC Santa Barbara)
Lukas Novotny (ETH Zürich)
Mark Raizen (U Texas Austin)
Serge Reynaud (Laboratoire Kastler Brossel, Paris)
Eva Weig (TU Munich)

Seminars will be given during the school by distinguished invited scientists

Poster and short seminar presentations by participants

Registration: The online Application Form can be found at <https://www.houches-school-physics.com>. Applications must reach the School before March 15, 2022 in order to be considered by the Selection Committee. The full cost per participant includes housing and meals, and is specified on the School's Website. Further information can be found on the website too. For Scientific Matters, please contact the organizers at cohaddon@lkb.upmc.fr.

For Administrative and Logistic Matters, please contact the Les Houches Physics School at:

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Location: Les Houches is a village located in Chamonix valley, in the French Alps. Established in 1951, the Physics School is situated at 1150 m above sea level in natural surroundings, with breathtaking views on the Mont-Blanc mountain range, conducive to reflection and discussion.

