

2018 Jacques Solvay International Chair in Physics Inaugural Lecture



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The importance of large deviations in non-equilibrium systems

Statistical Physics allowed to unify, at the end of the 19th century, Newton's mechanics and thermodynamics. It gave a way to predict the amplitude of fluctuations around the physical laws which were known at that time. Einstein, in his very first works, showed that the measurement of these fluctuations allowed to estimate the size of atoms. His reasoning, which was at the origin of the linear response theory, applied to the black body gave one of the first evidences of the duality wave-particle in Quantum Mechanics. Statistical Physics gives also a framework to predict large deviations for systems at equilibrium. In the last two decades, major efforts were devoted to extend our understanding of the statistical laws of fluctuations and large deviations to non-equilibrium systems. This talk will try to present some of the main recent progresses.

TUESDAY 23 OCTOBER 2018 AT 4.00 P.M.

**COFFEE AND TEA WILL BE SERVED AT 3.45 P.M.
AND DRINKS AT 5.00 P.M. IN FRONT OF THE SOLVAY ROOM**

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BUILDING N.O. 5TH FLOOR
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