



STATISTICAL PHYSICS SEMINAR

MINI COURSE ON NONEQUILIBRIUM STATISTICAL PHYSICS

Weizmann Institute of Science

Drory Seminar Room, Physics Building

Jorge Kurchan
ESPCI, Paris

We plan three talks, two introductory ones and possibly a seminar at the end

Tuesday 16 November at 14:00 hrs

Large deviations : from planets to glasses

When we approach a physical problem, numerically or analytically, our first aim is to understand the most probable, 'typical' situation. There are, however, rare events that take place with small probability but are, for some reason, important. The examples are many, ranging from chemical reactions (which take place through improbable 'activation' processes), to rare trajectories in turbulent systems (that may give a burst of drag to your car) or in planetary systems, events that make our solar system lose Mercury. Furthermore, when we think of glasses as systems that are "chaotic in space" (amorphous), we realize that the 'ideal glass state' is also a rare event, and may be analysed in an analogous way. From the numeric point of view, the problem is that observing an improbable event takes a long waiting time ... so that one has to develop new methods.

Wednesday 17 November at 14:00 hrs

Fluctuation theorems and their experimental tests

Fluctuation theorems are some of the very few identities that we have in out of equilibrium systems. They are very general, perhaps too much so: it is often not clear what the associated experimental tests are meant to decide.

Thursday 18 November at 14:00 hrs

A seminar on amorphous order