BERNOULLI LECTURE II

part of the Bernoulli semester on

Hyperbolic Dynamics, Large Deviations and Fluctuations

Hyperbolic systems and fluctuation theorems

by Giovanni Gallavotti

(Accademia dei Lincei and INFN, Roma)

General, model independent, laws governing stationary states of systems out of equilibrium, i.e. a Nonequilibrium Thermodynamis might be possible. As Equilibrium Thermodynamics it should be a macroscopoc manifestation of microscopic laws: in it the link between the two worlds has tradiionally been the Ergodic hypothesis. Following Ruelle's theory of turbulence and disordered motions the Caotic Hypothesis has been formulated proposing the identication of Hyperbolic Systems as (one among the) the keys to set in mathematical characters (hence understand) properties of systems in stationary states. The Fluctuation Theorem is a macroscopic property reecting the underlying Time Reversal symmetry and it can be considered as an extension beyond the linear regime of Onsager Reciprocity.

Thursday 16 May 2013
17h15 - Room CM1

Mandatory registration
Centre Interfacultaire Bernoulli
cib.epfl.ch
Deadline: 15 May 2013

FNSNF
Swiss National Science Foundation

EPFL
ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE