凝聚态物理-北京大学论坛

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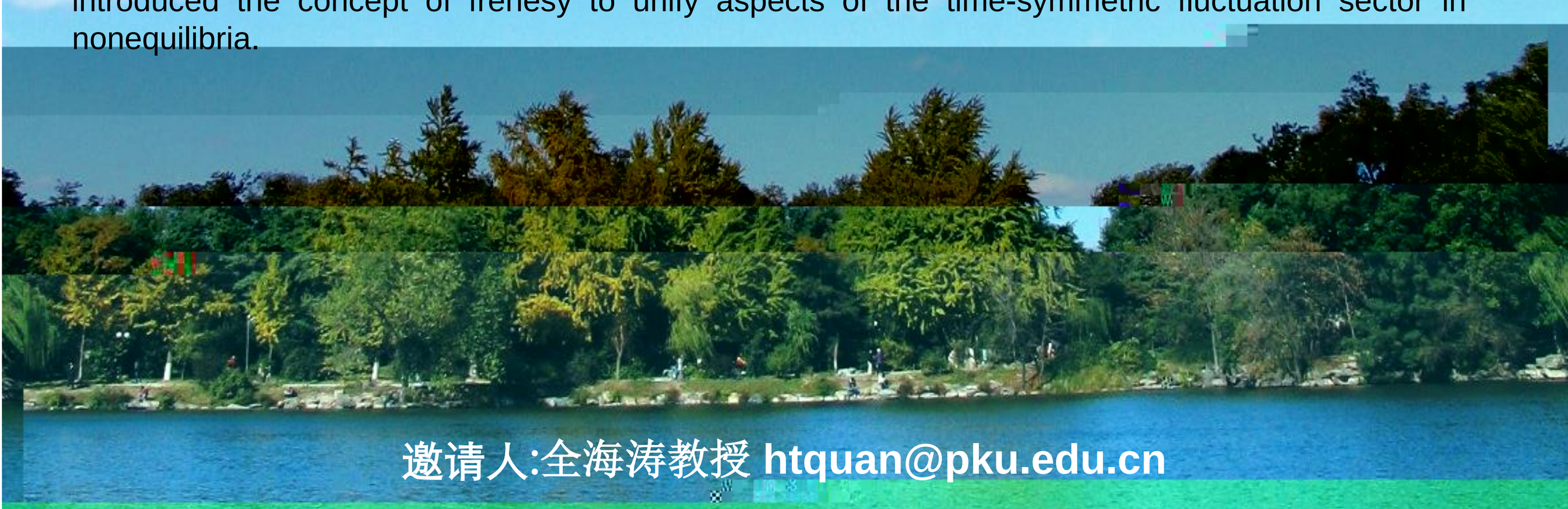
Nonequilibrium ensembles

Prof. Christian Maes

时间：3月28日（星期四）15:00—16:30
地点：北京大学物理大楼中212教室

Dynamical ensembles assign weights to system trajectories with respect to some reference process. They are essential in the theoretical description of nonequilibrium systems on mesoscopic scales, and today have become accessible experimentally with increasing precision. The action (or, Lagrangian) of such nonequilibrium ensembles are naturally decomposed in a time-symmetric and a time-antisymmetric part. This talk will concentrate on the time-antisymmetric part, which changes sign under dynamic time-reversal. It will be shown how that set-up naturally leads to fluctuation theorems for the variable entropy fluxes and entropy production. Those nonperturbative relations are useful for a number of general insights. The equally important time-symmetric part (frenesy) will be discussed in a follow-up lecture.

报告人简介：Christian Maes is the head of the Institute for Theoretical Physics at the KU Leuven, Belgium. He did his Ph.D. with Joel L. Lebowitz in 1988, and works in mathematical physics, especially on general aspects of fluctuation and response theory of nonequilibrium systems. In his work with Karel Netocny he has identified the fluctuating entropy production as the source of time-reversal breaking in the action of dynamical ensembles (1999-2003). More recently, he has introduced the concept of frenesy to unify aspects of the time-symmetric fluctuation sector in nonequilibria.



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Photoed by Xiaodong Hu