



Guest Lecture

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**Landauer's bound for repeated interaction
systems in the adiabatic regime**

Oktober 27, 2015

16:00 h, Room 8.122

University of Stuttgart, Pfaffenwaldring 57

Abstract:

We consider Landauer's principle for repeated interaction systems (RIS) consisting of a reference quantum system S that interacts, in sequence, with independent quantum probes forming a structured environment. Landauer's bound relates the energy variation of the environment to a decrease of entropy of the system S during the evolution. Assuming the environment displays small variations of order $1/T$ between the successive probes encountered by S , we develop a discrete time non-unitary adiabatic theorem that describes the reduced dynamics of S at time $n=T$. Our analysis shows that Landauer's bound for RIS is not saturated in the adiabatic regime.

This is work in collaboration with E. Hanson, Y. Pautrat and R. Raquépas

