Università degli Studi di Trieste
Dipartimento di Fisica

Seminar

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Friday March 2nd, 2018 – 2:30 PM – Room 204
Strada Costiera, 11 – Trieste

CURRENT FLUCTUATIONS IN BOUNDARY-DRIVEN QUANTUM SPIN-CHAINS

Abstract

Large dynamical fluctuations - atypical realisations of the dynamics sustained over long periods of time - can play a fundamental role in determining properties of the collective behaviour of both classical and quantum non-equilibrium systems. In this talk, we will first review how to characterise, by means of large deviations techniques, these atypical realisations in Markovian open quantum systems, and then we will make use of this formalism to describe fluctuations of the current in boundary-driven spin chains. While, in general, it is not possible to distinguish classical from quantum transport by monitoring mean currents, we will show that genuine quantum features become manifest in rare dynamical realisations. In the classical case, realisations with an atypically large number of events at the boundaries are as well sustaining a larger than typical current; conversely, in the quantum case, the Zeno effect leads to suppression of the current in fluctuations with large activity at the boundary

Organizzazione a cura di: prof. F. Benatti

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Everyone interested in the topic is welcome to attend