

Students talks : Heat beackflow in non-Markovian open quantum systems

Tuesday, 20 December 2016 10:00 (15 minutes)

“We characterize the time behavior of the energy exchange between an open quantum system and its environment in a non-Markovian dynamical regime using the full counting statistics formalism. In particular we focus on the occurrence of energy backflow from environment to system, to which we introduce a suitable condition and measure. We study in detail this quantifier in two paradigmatic open quantum systems, namely the spin-boson model and the quantum brownian motion, drawing a connection with recently introduced notions of non-Markovianity. Results show that, while Born-Markov semi-group limiting case and, more in general, Markovian regime prevent the occurrence of energy backflow, non-Markovianity allows for its observation and quantification”.

Presenter: GUARNIERI, Giacomo (MI)