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Title: The Landauer principle and repeated interaction systems

Abstract: We will discuss Landauer's principle for repeated interaction systems consisting of a reference quantum system S in contact with a environment E consisting of a chain of independent quantum probes. The system S interacts with each probe sequentially, for a given duration, and the Landauer principle relates the energy variation of E and the decrease of entropy of S via the entropy production of the dynamical process. We will consider refinements of the Landauer bound at the level of the full statistics associated to a two-time measurement protocol of the energy of E. The emphasis will be put on the adiabatic regime where the environment, consisting of a large number T of probes, displays variations of order $1/T$ between the successive probes, and the measurements take place initially and after T interactions.