

Heat conservation for open quantum system

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Abstract: In this work, we consider heat transport between several reservoirs in an open quantum system. We consider the two-time measurement framework, also known as full counting statistics. In this framework, description of heat variation changes considerably from its classical counterpart, in particular in terms of large deviation occurrence.

We identify a suitable conditions under which large fluctuations can be controlled. We describe of heat fluctuation through the study of its cumulant generating function. Moreover we show the generating function satisfy a translational symmetry, first noticed in [AGMT], and we explore its consequences in terms of first law statistical refinement. Optimality of our statements follows from the partially co-authored work that will be presented by R. Raquépas.

This is joint work with T. Benoist and Y. Pautrat.

[AGMT] Andrieux, D., Gaspard, P., Monnai, T., and Tasaki, S.: *Fluctuation theorems for currents in open quantum systems*. New J. Phys., 2009, **11** 109802