

ON THE ROLE OF NON-MARKOVIANITY IN THE THERMODYNAMICS OF DRIVEN OPEN QUANTUM SYSTEMS

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Thermodynamic machines are open systems (at least part-time) arising the question if memory effects do play a role in their dynamics, whether detrimental or as a possible resource. Here, we examine non-Markovian effects in different open quantum systems, where information backflow can result either from cold reservoirs or structured environments. We discuss heat flow, work and cooling in these settings. Also, we investigate the influence of optimised driving.

[1] R.S., S. Maniscalco, T. Ala-Nissilä, PRA 94, 010101(R) (2016)

[2] G. Guarnieri, J. Nokkala, R.S., S. Maniscalco, B. Vacchini, PRA 94, 062101 (2016)