

# **Optimization in stochastic thermodynamics: Efficiency of nano-machines (at maximum power)**

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Stochastic thermodynamics [1] provides a framework for discussing the efficiency of small machines. For engines operating between heat baths of different temperature, efficiency at maximum power (EMP) is determined and shown to be different from the classical Curzon-Ahlborn result [2]. Under isothermal conditions work extraction is possible through measurement and feedback [3]. Molecular motors and future artificial nano-machines should operate isothermally and autonomously. Under such conditions, case studies have shown that EMP can depend sensitively on the parameter space available for the optimization [4]. Rather universal statements become possible within a general model implementing basic thermodynamic consistency [5]. In particular, it is shown that EMP is not bounded by  $1/2$  contrary to recent claims.

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