Title:	Feynman-Smoluchowski engine at high temperatures and the role of constraints
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Abstract:	Feynman's ratchet and pawl is a paradigmatic model for energy conversion using thermal fluctuations in the mesoscopic regime. Here, we optimize the power output of the ratchet as a heat engine in the high temperatures limit, and derive the universality of efficiency at maximum power up to second order, using a non-linear approximation. On the other hand, the linear model may be optimized by constraining the internal energy scales in different ways. It is shown that simple constraints lead to well-known expressions of thermal efficiency in finite-time thermodynamics. Thereby, the constrained ratchet, in the linear regime, has been mapped to an effective finite-time thermodynamic model.
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