
Quantum machines coupled to nonequilibrium reservoirs

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Abstract

We consider quantum heat engines that operate between nonequilibrium stationary reservoirs. We evaluate their maximum efficiency from the positivity of the entropy production and show that it can be expressed in terms of an effective temperature that depends on the nature of the reservoirs. We further compute the efficiency at maximum power for different kinds of engineered reservoirs and derive a nonequilibrium generalization of the Clausius statement of the second law.

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