Title:	Universal efficiency at optimal work with Bayesian statistics.
Authors:	Johal, R.S. (/jspui/browse?type=author&value=Johal%2C+R.S.)
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Abstract:	If the work per cycle of a quantum heat engine is averaged over an appropriate prior distribution for an external parameter a, the work becomes optimal at Curzon-Ahlborn (CA) efficiency. More general priors of the form Π (a) ∝1/ aγ yield optimal work at an efficiency which stays close to CA value, in particular near equilibrium the efficiency scales as one-half of the Carnot value. This feature is analogous to the one recently observed in literature for certain models of finite-time thermodynamics. Further, the use of Bayes' theorem implies that the work estimated with posterior probabilities also bears close analogy with the classical formula. These findings suggest that the notion of prior information can be used to reveal thermodynamic features in quantum systems, thus pointing to a connection between thermodynamic behavior and the concept of information.
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