

A Possible Generalized Form of Jarzynski Equality

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Abstract: The crucial condition in the derivation of the Jarzynski equality (JE) from the fluctuation theorem is that the time integral of the phase space contraction factor can be exactly expressed as the entropy production resulting from the heat absorbed by the system from the thermal bath. For the system violating this condition, a more general form of JE may exist. This existence is verified by three Gedanken experiments and numerical simulations, and may be confirmed by the real experiment in the nanoscale.

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Key words: Jarzynski equality, fluctuation theorem, entropy production

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