
Experimental demonstration of information to energy conversion in a quantum system at the Landauer Limit

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Abstract

Landauer's principle sets fundamental thermodynamic constraints for classical and quantum information processing. Here we measure, for the first time, the heat dissipated in elementary quantum logic gates, at the Landauer limit, implemented in a Nuclear Magnetic Resonance system. This allows for the detailed study of irreversible entropy production in quantum information processors.

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