Energy Limits in Computation: A Review of Landauer's Principle, Theory and Experiments

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Abstrak

This book is a single-source reference to the issues involved in the Landauer principle, which has gained new prominence recently, due to the large amount of heat generated by today's computers. If Landauer's principle is correct, there may be ways to build computers that dissipate far less power (corresponding to heat generated) than today's computers. This book brings together all sides of the discussions regarding Landauer's principle, both theoretical and experimental, empowering readers to gain better understanding of dissipation in computation, and the limits if any to progress in computation related to energy dissipation. It represents the best and most thorough examination of the important issue of Landauer's principle that is available in one volume.