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Monday–Friday, March 5–9, 2018; Los Angeles, California

Session Y47: Nonequilibrium Thermodynamics
11:15 AM–1:51 PM, Friday, March 9, 2018
LACC Room: 507

Sponsoring Unit: GSNP
Chair: Stephen Teitsworth, Duke Univ

Abstract: Y47.00009 : Mixture of Gaussians perspective on the Landauer Bound*

12:51 PM–1:03 PM

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Landauer's bound states that succesful erasure of a bit of information results in an average dissipation of at least kTln 2. We analyze the effect of 'imperfections' on the minimum heat dissipation associated with a quasi static erasure of a bit of information. Two types of imperfections are considered - overlap between the two states which define a bit of memory and the asymmetry between the two states of a bit of memory. We conclude that, the two types of imperfections presented could lower the heat dissipation associated with erasure of a bit of information as compared to the Landauer's bound.

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