

Abstract Submitted
for the SES06 Meeting of
The American Physical Society

Energetics and thermal transport of a Brownian heat engine in the underdamped regime.¹ RONALD BENJAMIN, RYOICHI KAWAI, University Of Alabama at Birmingham — Energetics and coherence of transport in the presence of non-uniform temperature is still an open problem. We study the same for a Brownian heat engine based on the Buttiker-Landauer ratchet model. Unlike other ratchet models where the role of inertia is not important in the study of stochastic energetics, efficiency of the Buttiker-Landauer ratchet can only be evaluated properly when inertia is taken into account. We study this system via numerical simulations and present our results.

¹I would wish to acknowledge financial support from the GAFP (Graduate Assistantship Fellowship Program) Fellowship of the University of Alabama at Birmingham .

Ronald Benjamin
University Of Alabama at Birmingham

Date submitted: 25 Sep 2006

Electronic form version 1.4