Energetics, coherent transport and work fluctuations of a Brownian particle driven by time dependent temperature RONALD BENJAMIN, University Of Alabama at Birmingham — We study the efficiency and transport coherence of a Brownian particle in an asymmetric potential and driven by time dependent temperature, also known as a diffusion ratchet. Effect of coupling between many different Bownian particles is also discussed. Work fluctuations of the Brownian particle in a bistable potential and subject to time dependent temperature is studied and the Jarzynski equality is confirmed from numerical solution of the Langevin equation. Analytical results obtained for a harmonic potential are also presnted.

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