Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Field Theoretic Description of Non-Equilibrium Chemical Work Relations JONATHAN PHAM, BENJAMIN VOLLMAYR-LEE, Bucknell University — We develop a field theoretic description of nonequilibrium chemical work relations, generalizing the well-known Jarzynski equality. We consider classical particles undergoing chemical reactions in a local potential. The particles are coupled to a chemostat and a thermal reservoir, with dynamics governed by detailed balance. Work protocols are imposed by varying the local potential, and work relations appear simply as a result of a gauge-like transformation combined with time reversal. We then generalize the method to chemical systems which violate detailed balance.

Benjamin Vollmayr-Lee
Bucknell University

Date submitted: 10 Nov 2016 Electronic form version 1.4