

Abstract Submitted  
for the DFD07 Meeting of  
The American Physical Society

**Non-Equilibrium Thermodynamics of Reactive Systems**<sup>1</sup> JOSEPH POWERS, SAMUEL PAOLUCCI, University of Notre Dame — Construction of the Slow Invariant Manifold (SIM) for a reactive system is coming to be realized as the linchpin in a rational method of reduced kinetics. Here a method of constructing a finite dimensional SIM based on identifying critical points and connecting them with trajectories is shown for a spatially homogeneous reactive system. The relation between this analysis and classical as well as irreversible thermodynamics is examined. Extensions to reactive flow systems are considered.

<sup>1</sup>National Science Foundation

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Date submitted: 04 Aug 2007

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