

Abstract Submitted
for the DFD07 Meeting of
The American Physical Society

Sorting Category: 38. (T)

Non-Equilibrium Thermodynamics of Reactive Systems¹ 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.

¹National Science Foundation

Prefer Oral Session
 Prefer Poster Session

Joseph Powers
powers@nd.edu
University of Notre Dame

Date submitted: 04 Aug 2007

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