

Abstract Submitted  
for the DFD15 Meeting of  
The American Physical Society

**Finite-time barriers to reaction front propagation** RORY LOCKE, JOHN MAHONEY, KEVIN MITCHELL, None — Front propagation in advection-reaction-diffusion systems gives rise to rich geometric patterns. It has been shown for time-independent and time-periodic fluid flows that invariant manifolds, termed burning invariant manifolds (BIMs), serve as one-sided dynamical barriers to the propagation of reaction front. More recently, theoretical work has suggested that one-sided barriers, termed burning Lagrangian Coherent structures (bLCSs), exist for fluid velocity data prescribed over a finite time interval, with no assumption on the time-dependence of the flow. In this presentation, we use a time-varying fluid “wind” in a double-vortex channel flow to demonstrate that bLCSs form the (locally) most attracting or repelling fronts.

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None

Date submitted: 31 Jul 2015

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