

Abstract Submitted  
for the DFD07 Meeting of  
The American Physical Society

**Triggering turbulence in pipe and other linearly stable flows** TOBIAS M. SCHNEIDER, BRUNO ECKHARDT, Philipps-Universitaet Marburg — In pipe flow and some other shear flows the laminar profile is linearly stable and turbulence may only be achieved through finite amplitude perturbations. Regions of laminar and turbulent dynamics in the state space of the system are separated by the *edge of chaos*. Using an iterated bracketing technique we can numerically trace the dynamics in this edge of chaos and determine the invariant relative attractors. We will show results for plane Couette flow, pipe flow in the full space and in a symmetry reduced subspace to illustrate the variety of relative invariant attractors that can occur. The significance of these states lies in their governing role for triggering turbulence as well as for relaminarization.

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Date submitted: 03 Aug 2007

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