State selection in the stabilized Kuramoto Sivashinsky equation with additive noise

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We study the 1D stabilized Kuramoto Sivashinsky with additive uncorrelated random noise a model of a driven out of equilibrium system. In the presence of weak additive noise, the Eckhaus band of stable stationary periodic states of the deterministic system shrinks to a narrow region near the center of the band. This is consistent with the behavior of the phase diffusion constant of these periodic states which supports our conjecture that the stochastic noise selects a unique stationary state.