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The effects of spatial symmetry breaking on unstable state evolution[1] RACHELE DOMINGUEZ, KIPTON BARROS, W. KLEIN, Boston University — We develop a theory that predicts two distinct stages for the early unstable kinetics of systems with spatial symmetry breaking transitions. In the first stage the kinetics is dominated by symmetry preserving dynamics which acts on a short time scale. In the second stage, which shares some characteristics with the Cahn-Hilliard-Cook theory, noise driven fluctuations break the symmetry of the initial phase on a time scale that is large compared to the first stage for systems with an effective long-range interaction. Our simulations of the initial evolution of a long-range antiferromagnetic Ising model quenched into an unstable region are consistent with our predictions.

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