

Time evolution of intermittency: Passive sliders on a KPZ surface

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Noninteracting particles which move along the local gradients of a Kardar Parisi Zhang surface tend to cluster in valleys which continually re-form as the dynamics proceeds. In the steady state, spatial and temporal correlation functions involving the particle density exhibit intermittency, quantified by the divergence of the flatness (kurtosis) as the scaled time approaches zero.

The approach to the intermittent steady state shows interesting features. We propose and verify numerically a scaling form for a “coarsening” correlation function describing the degree of clustering. We also study the aging properties of structure functions. We argue that the flatness is a nonmonotonic function of the time interval, with different scaling forms at large and small values of the waiting time. These forms are verified by simulation.