

Abstract Submitted
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Crossover behavior in models of depinning YAN-JIUN CHEN, LASSP, Cornell Univ., LASSE LAURSON, ISI in Torino, Italy and Department of Applied Physics, Aalto University, Helsinki, Finland, STEFANOS PAPANIKOLAOU, LASSP, Cornell Univ., STEFANO ZAPPERI, IENI-CNR, Milano, Italy and ISI in Torino, Italy, JAMES P. SETHNA, LASSP, Cornell Univ. — We explore the behavior of models describing driven interfaces in random media. These models are useful in describing a wide range of real-world systems: disordered magnets, fluids in porous medium, pinning of flux lines in superconductors, and fluid imbibition in paper. Variations of these models have been numerically studied and classified into distinct universality classes at the depinning transition, however the exact structure of the phase space is still not known. We are investigating the crossover behavior in between various linear and nonlinear models with short-range and long-range interactions, and will report on their respective scaling functions of height-height correlation and size distributions of avalanches.

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