

Abstract Submitted
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Crystal Surfaces out of Equilibrium: Instabilities, Multiscaling and Non-locality ALBERTO PIMPINELLI, LASMEA, U. Blaise Pascal Clermont-2, France, & U. of Maryland, FLORIN NITA, U. of Genoa, Italy — We have recently proposed a novel scenario for the step meandering instability on vicinal surfaces, in which the instability is ascribed to unhindered diffusion of atoms along the step edges.¹ Then, in a rather counterintuitive way, step meandering appears due to the very mechanism - step edge diffusion - which may be expected to oppose it. We discuss the detailed comparison of the scaling properties of unstable surfaces driven by different atomistic mechanisms. We have discovered an unsuspected richness of behaviors: anomalous scaling, multiaffinity, . . . We discuss a number of continuum equations that share several features with the simulations. Implications for experiments are also discussed.

¹F. Nita and A. Pimpinelli, Phys. Rev. Lett. 95, 106104 (2005)

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