

## Depinning in Long-ranged potential

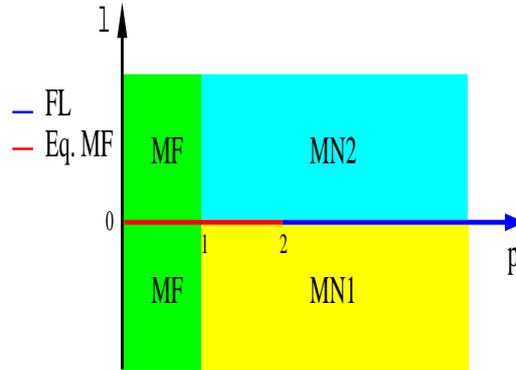
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We present new results on the depinning transition of bounded Kardar-Parisi-Zhang (KPZ) interfaces. We focus on long-ranged interactions, either attractive or repulsive, in this context, positive and negative KPZ non-linearities lead to physically different pictures. We use the interfacial representation given by a Langevin equation :

$$\partial_t h(\mathbf{x}, t) = \nabla^2 h + \lambda(\nabla h)^2 + a + \frac{b}{h^{p+1}} + \frac{c}{h^{q+1}} + \sigma\eta(\mathbf{x}, t),$$

with  $c > 0$  and  $\eta$  a gaussian delta correlated noise. Our results are summarized in the figure below. As already known, the equilibrium case ( $\lambda = 0$ ) exhibits a mean-field (MF) and a fluctuation regime (FL) separated by  $p = 2$ . In analogy with the equilibrium picture, numerics and analytical arguments for the nonequilibrium counterpart locate in  $p = 1$ , the boundary between a MF and a *Multiplicative noise* (MN) transition.



[1] H. Hinrichsen, R. Livi, D. Mukamel, and A. Politi, Phys. Rev. Lett. **79**, 2710 (1997). F. de los Santos, M.M. Telo da Gama, and M.A. Muñoz, Europhys. Lett. **57**, 803 (2002).

[3] Work accepted for publication in Phys. Rev. E.