

Sneppen and Jensen Reply: Tang and Leschhorn [1] correctly state that an interface evolving according to model *B* in Ref. [2] develops saturated configurations similar to the ones of directed percolating strings on pinned sites, as realized in Ref. [3]. The distributions of η_{\min} and η values on the saturated states seen in Fig. 1(a) (for initial $\eta \in [0, 1]$) demonstrate the correctness of their interesting identity $\eta_{\min}(\max) = 1 - \rho_c = 0.4615$. Comparing saturated state dynamics of model *B* with that of Refs. [3,4] is, however, problematic because interfaces developing on networks finely tuned to criticality (for directed percolation) stop their development completely when saturation is reached, thus allowing for only a small regime with temporal scaling. In contrast, model *B* develops an infinite sequence of saturated configurations that allow for clear determination of temporal scaling of the height-height correlations $C^q(t) = \langle [h(x, t + \tau) - h(x, \tau) - \langle h(x, t + \tau) - h(x, \tau) \rangle]^q \rangle^{1/q} \propto t^{\beta_q}$. In fact, as seen in [6], $\beta_2 = 0.69 \pm 0.02$ differs from the scaling reported in [3] (but similar to the one of model [4,5]).

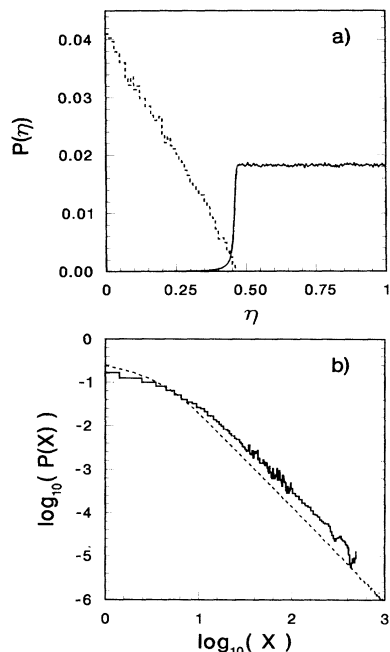


FIG. 1. (a) Ensemble averaged distribution of noise η on a saturated interface (with length $L = 4096$) developed according to model *B*. Full line displays a histogram of all η ; dashed line only of minimal η . As input we used $\eta \in [0, 1]$ homogeneously distributed. (b) Full line shows distribution of distances between two minimal $\eta(x), x \in [1, L]$ on a saturated interface. Dashed line shows distribution of distances between subsequent activities [6].

Furthermore, in significant contrast to the results of [3], model *B* has different temporal scaling of higher moments [6]: $\beta_\infty = 0.40 \pm 0.05$, which cannot be accounted for by exponents of directed percolation and indicates a new class of exponents.

The Comment [1] further elaborates on the possible relation between model *B* and the Kardar-Parisi-Zhang (KPZ) equation with quenched *additive noise at the depinning transition*. To make such relations possible we guess that it at least will be necessary to fine tune the driving force such that the deterministic and the stochastic terms will balance in average, in order to allow long range power law correlations to develop (otherwise we conjecture saturated state dynamics with standard KPZ scaling: $\chi = \frac{1}{2}$ and $\beta = \frac{1}{3}$). In contrast the dynamics of model *B naturally* (self-organized) develops long range correlations of the quenched noise $\eta(x, h(x))$ along each realization of the interface $\{x, h(x)\}$. This is seen in Fig. 1(b) where the spatial distribution function of distances X between the two lowest η values of each time step (at saturation) is $P(X) \propto X^{-2.2 \pm 0.2}$. Thus subsequent motions on the developing interface at saturation are correlated, as seen from the dashed line in Fig. 1(b). In fact Ref. [6] demonstrates that the scaling of subsequent spatial activities plays a major role in understanding the temporal scalings at saturation in model *B*.

K.S. acknowledges financial support from the Carlsberg Foundation.

Kim Sneppen and M. H. Jensen
Niels Bohr Institute
Blegdamsvej 17
DK-2100 Copenhagen Ø, Denmark

Received 13 May 1993

PACS numbers: 05.70.Ln, 47.55.Mh, 68.35.Fx, 68.45.Gd

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- [6] K. Sneppen and M. H. Jensen (to be published).