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Avalanches Near the Onset of Jamming J.M. SCHWARZ, Syracuse University, BISMAYAN CHAKRABARTI, Indian Institute of Technology, Kanpur — As the jamming transition is approached from the liquid-like side, experiments and simulations demonstrate that a random assembly of particles exhibits avalanche-like behaviour in response to a probe particle being dragged through it. To better understand this response, we construct a lattice model with active and inactive particles occupying some fraction of the lattice, with each site being occupied by at most one particle. Only the active particles can hop to empty neighboring sites and can activate k neighboring inactive particles at some rate λ_k . Also, active particles can become inactive at some rate γ . When $\lambda_{k \geq 2} = 0$, this model is closely related to the conserved lattice gas model which is thought to belong to the universality class of absorbing phase transitions with a conserved field, i.e. conserved stochastic sandpile models. To mimic the approach towards jamming, an increasingly more crowded environment, we study this model for $\lambda_{k \geq 1} > 0$ and search for a new universality class as $\lambda_{k=1}$ approaches zero.

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