Bak–Tang–Wiesenfeld model for various topologies and ranges of interaction

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In this paper, the Bak–Tang–Wiesenfeld model for various substrate topologies and a variety of neighborhoods is reconsidered. With computer simulation, we study the distribution of avalanche sizes. Using the Z-test we confirm that independently of the substrate topology and the range of neighborhood, the exponent that governs the power law of the probability distribution of the size of avalanches is the same and close to 1.2. However, this requires a smartly chosen number of deposited grains in relation to the linear size of the system.