Influence of Inhomogeneity on Critical Behavior of Earthquake Model on Random Graph

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Abstract: We consider the earthquake model on a random graph. A detailed analysis of the probability distribution of the size of the avalanches will be given. The model with different inhomogeneities is studied in order to compare the critical behavior of different systems. The results indicate that with the increase of the inhomogeneities, the avalanche exponents reduce, i.e., the different numbers of defects cause different critical behaviors of the system. This is virtually ascribed to the dynamical perturbation.

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