

[P12] Mean-Field Behavior in a Conserved Lattice Gas with Thermal Noise

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We numerically study absorbing phase transitions in terms of the generalized conserved lattice gas (GCLG)[†], where two types of random network topologies are considered with an effective temperature (thermal noise parameter, p). In this study, we focus on dynamic scaling for spatiotemporal properties near the GCLG absorbing phase transition point. Based on the mean-field (MF) theory and the finite-size scaling (FSS) analysis of continuous phase transitions, we argue the MF value of the FSS exponent. Finally, we discuss a MF schematic phase diagram and universality issues in the GCLG, which are compared with those in two dimensions.

[†] J.-S. Yang, I.-M. Kim, and W. Kwak, Phys. Rev. E **78**, 051118 (2008)