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Nonequilibrium phase transitions in epidemics and sandpiles. (English) Zbl 0994.82058
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Summary: Nonequilibrium phase transitions between an active and an absorbing state are found in models of populations, epidemics, autocatalysis, and chemical reactions on a surface. While absorbing-state phase transitions fall generically in the directed-percolation universality class, this does not preclude other universality classes, associated with a symmetry or conservation law. An interesting issue concerns the dynamic critical behavior of models with an infinite number of absorbing configurations or a long memory. Sandpile models, the principal example of self-organized criticality (SOC), also exhibit absorbing-state phase transitions, with SOC corresponding to a particular mode of forcing the system toward its critical point.

MSC:

82C26 Dynamic and nonequilibrium phase transitions (general) in statistical mechanics Cited in 7 Documents

Keywords:

dynamic critical behavior; active state; absorbing state

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