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A strong correlation inequality for contact processes and oriented percolation. (English)

Zbl 0890.60094

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The strengthening of the positive correlation inequality $\nu(A \cap B)\nu(A \cup B) \geq \nu(A)\nu(B)$ is proved for the following two cases. The extinction probability $\nu(A)$ for the contact process on a countable set S with initial state $A \subset S$, or equivalently, for $\nu(A) = \nu_\infty(\{\eta; \eta_A \equiv 0\})$ with ν_∞ being the upper invariant measure of the contact process. The same inequality is independently proved for ν being the extinction probability of an oriented percolation which can be viewed as a discrete time version of the one-dimensional contact process.

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MSC:

60K35 Interacting random processes; statistical mechanics type models; percolation theory

Cited in 2 Reviews

82C22 Interacting particle systems in time-dependent statistical mechanics

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