CRITICAL VALUES FOR THRESHOLD CONTACT PROCESSES IN LARGE DIMENSIONS.

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Abstract   (Joint work with Roberto Schonmann) We consider spin systems on $\{0,1\}^{Z^d}$ where spins of value 1 change to spins of value 0 at rate 1 irrespetive of the surrounding configuration but for which 0's change to 1's at rate λ only if at least r neighbouring values are 1 where $r \leq d$. The system is attractive and thus two critical values are well defined: the value λ above which there exist non trivial equilibria for the system the value λ such that if the system begins from product measure with a strictly positive density then the system does not die out (in an obvious sense).

We show that both parameters tend to zero as d tends to infinity.

The work follows earlier work of Toom, Chen, Fontes, Sidoravicius and Schonmann and Fontes and Schonmann.