CONTACT PROCESS UNDER RENEWALS

LUIZ RENATO G. FONTES
USP, São Paulo, Brazil

THOMAS S. MOUNTFORD
EPFL, Lausanne, Switzerland

MARIA EULÁLIA VARES
UFRJ, Rio de Janeiro, Brazil

This talk is based on the joint paper [2]. It continues the study of renewal contact processes initiated in [1], where we showed that if the tail of the interarrival distribution $\mu$ is heavier than $t^{-\alpha}$ for some $\alpha < 1$ (plus auxiliary regularity conditions) then the critical value vanishes. Here we show that if $\mu$ has decreasing hazard rate and tail bounded by $t^{-\alpha}$ with $\alpha > 1$, then the critical value is positive in the one-dimensional case. A more robust and much simpler argument shows that the critical value is positive in any dimension whenever the interarrival distribution has a finite second moment.

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References