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Contact process on static and adaptive preferred degree networks¹ SHIVAKUMAR JOLAD, WENJIA LIU, BEATE SCHMITTMANN, R.K.P. ZIA, Virginia Polytechnic Institute and State University — We consider epidemic spreading on an adaptive network where individuals have a fluctuating number of connections around some preferred degree κ . Using very simple rules for forming such a network, we find some unusual statistical properties which provide an excellent platform to study adaptive contact processes. For example, by letting κ depend on the fraction of infected individuals, we can model behavioral changes in response to how the extent of the epidemic is perceived. Specifically, we explore how various simple feedback mechanisms affect transitions between active and inactive states. In addition, we investigate the effects of two interacting networks, e.g., with a variety of κ 's and cross links.

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