

METASTABLE DENSITIES FOR CONTACT PROCESSES ON RANDOM GRAPHS

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We consider the contact process on a random graph chosen with a fixed degree, power law distribution, according to a model proposed by Newman, Strogatz and Watts (2001). We follow the work of Chatterjee and Durrett (2009) who showed that for arbitrarily small infection parameter $\lambda > 0$, the limiting metastable density does not tend to zero as the graph size becomes large. We show three distinct regimes for this density depending on the tail of the degree law.

Joint work with Thomas Mountford and Qiang Yao.

REFERENCES

- [1] S. Chatterjee and R. Durrett, *Contact process on random graphs with degree power law distribution have critical value zero.*, *Annals of Probability* **37** (2009).
- [2] M. E. J. Newman, S. H. Strogatz, and D. J. Watts, *Random graphs with arbitrary degree distributions and their applications.*, *Physical Review E* **64** (2001).