CONTACT PROCESS ON THE HYPERBOLIC RANDOM GRAPH

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ABSTRACT. We consider the contact process on the Hyperbolic Random Graph, in the regime when the degree distribution has power law with exponent in $(1, 2)$ (thus with a finite mean but infinite second moment). We investigate the behavior of the survival probability as the infection parameter goes to zero, which is its critical value here, and also the question of metastability on finite versions of the graph. As a result we will see that the Hyperbolic random graph is one of the very few examples of random graphs where exact computations of some critical exponents can be obtained.

Joint work with Amitai Linker, Dieter Mitsche, and Daniel Valesin.