

Stochastic Processes In Evolution and Ecology

Bath - Berlin - Frankfurt - Mainz - Warwick

The contact process in an evolving random environment

Recently, there has been an increasing interest in interacting particle systems on evolving random graphs, respectively in time evolving random environments. We are particularly interested in the contact process in an evolving (edge) random environment on (infinite) connected and transitive graphs. We assume that the evolving random environment is described by an autonomous ergodic spin systems with finite range, for example by dynamical percolation. This background process determines which edges are open or closed for infections.

In particular, we discuss the phase transition of survival and the dependence of the associated critical infection rate on the random environment and on the initial configuration of the system. For the latter, we state sufficient conditions such that the initial configuration of the system has no influence on the phase transition between extinction and survival. We show that this phase transition coincides with the phase transition between ergodicity and non-ergodicity and discuss conditions for complete convergence. At the end of the talk we consider the special case of a contact process on dynamical percolation as an application.

This talk is based on joint work with Anja Sturm.

Speaker:

Marco Seiler

Time:

Monday, 19.12.22, 4 P.M. CET

The lecture will be held online. Interested? You can get the link from Prof. Jochen Blath
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