

The Symbiotic Branching Model: Moment Spectrum, Longtime-behaviour and Width of the Interface

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In this talk we discuss some of the longterm- and path-properties of the so-called 'symbiotic branching model', introduced by Etheridge and Fleischmann in 2004. The model can be viewed as a spatial system of two interacting species who can only reproduce if both types are simultaneously present in the same location. Parametrised by a correlation parameter ρ , the model provides a unified framework for several classical particle systems, like the stepping-stone and a (version of) the parabolic Anderson model. We show that it exhibits a rich and interesting longterm behaviour and prove a result about the propagation of its interface. A key to the understanding of this model lies in an explicit 'moment spectrum' given as a function of ρ .

The talk is based on a joint paper with Leif Doering (Berlin) and Alison Etheridge (Oxford), to appear in the Annals of Probability (2010).