Generalized Front Propagation for Stochastic Spatial Models

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Abstract

In this talk, I will present a general framework which can be used to analyze the scaling limits of various stochastic spatial "population" models. Such models include ternary Branching Brownian motion subject to majority voting and several examples of interacting particle systems motivated by biology.

The approach is based on moment duality and a PDE methodology introduced by Barles and Souganidis which can be used to study the asymptotic behaviour of rescaled reaction-diffusion equations. In the limit, the models exhibit phase separation which is governed by a global-in-time, generalized notion of mean-curvature flow.

This talk is based on joint work with Thomas Hughes (Bath).

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*Punctual, i.e. sine tempore!