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Inhomogeneous F-KPP equations - A probabilistic perspective

The standard F-KPP (Fisher- Kolmogorov-Petrovsky-Piscounov) equation is a classical reactiondiffusion equation admitting so-called travelling wave solutions. In this talk, we will explain how certain interacting particle systems may be used to describe solutions of (inhomogeneous) F-KPP equations. We then use this description to obtain estimates on the transition front of such solutions.

Moreover, we will see how the Feynman-Kac formula (a tool from stochastic analysis) may be used to obtain estimates on solutions of F-KPP equations.

The talk is based on ideas from collaborations with A. Bovier, A. Drewitz and P. Hanigk.