

Vincent Bansaye (Paris 6)

Large deviations for branching processes in random environment.
(joint work with Julien Berestycki)

Branching processes in random environment are a generalization of Galton Watson processes where at each generation the reproduction law is picked randomly.

By contrast to the Galton-Watson case, here random environments and the branching process can conspire to achieve atypical growth. When each individual leaves at least one offspring in the next generation almost surely, we compute the exact rate function of these events and we show that conditionally on the large deviation event, after suitable renormalisation, the trajectory of the process converges to a deterministic function in probability in the sense of the uniform norm.