

Tail asymptotics and the limit of the centered maximum in branching Brownian motion and friends

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Branching Brownian motion is a classical process in probability theory that belongs to the class of log-correlated random fields. It is known that the position of the maximal particle suitably normalised converges to a randomly shifted Gumble distribution. In this talk I will revisit this convergence and explain how it can be recovered from the tail of the maximum. Via this approach one can see how the shape of the derivative martingale naturally emerges from the shape of the tail. I will also explain how this approach can actually be used in a class of related models (variable speed branching Brownian motion) to actually obtain the limiting distribution of the recentered maximum.

Based on ideas that emerged from a collaboration with A. Bovier.