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Fluctuations of Stationary Hastings Levitov are log-correlated

Abstract:

Stationary Hastings Levitov (SHL) provides a good model for diffusion limited aggregation growing on a long fiber. Due to regularity properties of the conformal map attaching a slit to the upper half plane, no particle normalization is required to avoid particle size blowup, such as one obtains for the Hastings Levitov process growing on a disk. In this talk we will discuss a work in progress with Noam Berger (TUM) showing that the fluctuations of SHL around it's deterministic growth rate is log-correlated for points of distance smaller than the time of the process and uncorrelated for points of distance larger than the time. The local maxima of this field has a physical interpretation as it corresponds to the longest arms in the aggregate. Due to the tractability of the process, one can also bound the infinitesimal generator and in turn the exponential moments.