

Extremal process of local time for simple random walk on b -ary tree

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In this talk I will consider the simple random walk on the b -ary tree $T_{\leq n}$ of height n and its local times $(L_v^n)_{v \in T_{\leq n}}$ at times much larger than the maximal hitting time. The main object of this talk is the extremal point process of the form

$$\sum_{v \in T_{\leq n}} \delta_{\sigma(v)} \otimes \delta_{\sqrt{L_v^n - m_n}},$$

where $\sigma(v)$ is the “location” of v in $[0, 1]$ and m_n is the absolute maximum of the local time process. I will describe a result about weak convergence of the extremal process as n goes to infinity. The limit object is a Poisson point process decorated by independent copies of a point process.

This talk is based on joint work with Marek Biskup (UCLA).