A law of the iterated logarithm for iterated random walks, with application to random recursive trees

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Consider a general branching process (a.k.a Crump-Mode-Jagers process) generated by an increasing random walk whose increments have finite second moment. Let $Y_k(t)$ be the number of individuals in generation $k \in \mathbb{N}$ born in the time interval $[0, t]$. I shall discuss a law of the iterated logarithm for $Y_k(t)$ with fixed k, as $t \to +\infty$. As a corollary, I shall also present a law of the iterated logarithm for the number of vertices at a fixed level k in a random recursive tree, as the number of vertices goes to ∞.

The talk is based on the joint article [1] with Olexandr Iksanov (Kyiv) and Zakhar Kabluchko (Münster).

References

[1] O. Iksanov, Z. Kabluchko and V. Kotelnikova, *A law of the iterated logarithm for iterated random walks, with application to random recursive trees*. Preprint (2022) available at https://arxiv.org/abs/2212.13441

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