

Zakhar Kabluchko

Profiles of random trees and mod- ϕ convergence

The random recursive tree is constructed in the following way. At time 0 start with one vertex, the root. Then proceed inductively as follows. At any time n , given a tree with $n + 1$ vertices, choose one vertex uniformly at random and add one offspring to this vertex. The profile of the tree at time n is a random function $L_n(k)$ counting the number of vertices at distance k from the root. We shall prove limit theorems for profiles of random recursive trees, as $n \rightarrow \infty$, using the methods of mod- ϕ -convergence. Similar methods apply to many other random trees studied in the analysis of algorithms, for example the binary search trees and the plane-oriented recursive trees.

This is joint work with Alexander Marynych and Henning Sulzbach.