



ID de Contribution: 33

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Mini cours: Scaling limits of branching random walks

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We consider a branching random walk whose genealogy is given by the family tree of a Bienaymé branching process conditioned to have n vertices. Think of this model as a random tree in which each vertex has a spatial location that is given by the position of its parent plus its own random displacement.

In the first lecture, we will consider the convergence under rescaling of the underlying tree to the Brownian continuum random tree, using a stick-breaking construction of the tree.

In the second lecture, we will enrich the stick-breaking construction to also encode the branching random walk, and show convergence under rescaling to the Brownian snake.

In the third and final lecture, we will discuss an application to the difference of the height process and Lukasiewicz path of Bienaymé trees, and an application to the height process of random looptrees.

These lectures are partially based on a forthcoming work with Louigi-Addario Berry, Christina Goldschmidt and Rivka Mitchell.

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