Drmota, Michael; Gittenberger, Bernhard

The shape of unlabeled rooted random trees. (English) Zbl 1221.05047

Summary: We consider the number of nodes in the levels of unlabeled rooted random trees and show that the stochastic process given by the properly scaled level sizes weakly converges to the local time of a standard Brownian excursion. Furthermore we compute the average and the distribution of the height of such trees. These results extend existing results for conditioned Galton-Watson trees and forests to the case of unlabeled rooted trees and show that they behave in this respect essentially like a conditioned Galton-Watson process.

MSC:
05C05 Trees
05C80 Random graphs (graph-theoretic aspects)

Keywords:
number of nodes; conditioned Galton-Watson trees

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