Branching processes in random trees

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Abstract

We study the behavior of the branching process in a random environment on trees in the critical, subcritical and supercritical case. We are interested in the case when both the branching and the step transition parameters are random quantities. We present quenched and annealed classifications for such processes and determine some limit theorems in the supercritical quenched case. Corollaries cover the percolation problem on the random trees. The main tools are the compositions of the random generating functions.

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