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Stationary Eden model on groups

Abstract:

We consider two stationary versions of the Eden model, on the upper half planar lattice, resulting in an infinite forest covering the half plane. Under weak assumptions on the weight distribution and by relying on ergodic theorems, we prove that almost surely all trees are finite. Using the mass transport principle, we generalize the result to Eden model in graphs of the form $G \times \mathbb{Z}$, where $G$ is a Cayley graph. This generalizes certain known results on the two-type Richardson model, in particular of Deijfen and Håggström in 2007.