

SHAPE AND LOCAL GROWTH FOR MULTIDIMENSIONAL BRANCHING RANDOM WALKS IN RANDOM ENVIRONMENT

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ABSTRACT. We study branching random walks in random environment on the d -dimensional square lattice, $d \geq 1$. In this model, the environment has finite range dependence, and the population size cannot decrease. We prove limit theorems (laws of large numbers) for the set of lattice sites which are visited up to a large time as well as for the local size of the population. The limiting shape of this set is compact and convex, and the local size is given by a concave growth exponent. Also, we obtain the law of large numbers for the logarithm of the total number of particles in the process. This is a joint work with Francis Comets, it was recently published in ALEA, see <http://alea.impa.br/articles/v3/03-11.pdf>

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