

Central limit theorem for branching random walks in random environment.

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Abstract.

We consider the branching random walks in d -dimensional integer lattice with time-space i.i.d. offspring distributions. Then, the normalization of the total population is a non-negative martingale and it converges to a certain random variable almost surely. When $d \geq 3$ and the fluctuation of environment satisfies a certain uniform square integrability, then it is non-degenerate and we prove a central limit theorem for the density of the population in terms of almost sure convergence.