

Ivlev O. E. (Lomonosov MSU, Moscow, Russia). **Perturbation of the random walk generator with finite variance of jumps by a random potential in a homogeneous environment.** We consider a continuous-time symmetric branching random walk (BRW) on \mathbb{Z}^d , $d \in \mathbb{N}$, in a homogeneous branching environment, where the intensities of particle death and splitting at each $x \in \mathbb{Z}^d$ are determined by a pair of non-negative random variables $(\xi^-(x, \omega), \xi^+(x, \omega))$, defined on a certain probability space $(\Omega, \mathcal{F}, \mathcal{P})$, see, [?]. It is assumed that the pairs $(\xi^-(x), \xi^+(x))$ are independent and identically distributed, and the random potential is $V(x, \omega) := \xi^+(x, \omega) - \xi^-(x, \omega)$. The expectation with respect to \mathcal{P} is denoted by $\langle \cdot \rangle$. In [?] the underlying motion of the BRW was a simple symmetric random walk. The aim of this work is to study the asymptotics of higher "annealed" moments $\langle m_n^p \rangle$, $p \geq 1$, $n > 1$, of local and total particle numbers in the BRW, both for a wider class of symmetric, spatially homogeneous, and irreducible random walks with finite jump variance, and under more general assumptions on the random potential $V(x, \omega)$.

THEOREM. *Suppose that $\left\langle \left(\frac{\xi^+(x, \omega)}{\ln_+ V(x, \omega)} \right)^d \right\rangle < \infty$ and $\lim_{t \rightarrow \infty} \frac{t}{\ln \langle e^{V\tau} \rangle} = 0$. Then for all integer moments $\langle m_n^p \rangle$ it holds $\lim_{t \rightarrow \infty} \frac{\ln \langle m_n^p \rangle}{\ln \langle e^{pnVt} \rangle} = 1$.*

СПИСОК ЛИТЕРАТУРЫ

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