**Vyshnevetskiy, A. L.**

**Convergence of random walks on double transitive group generated by its permutational character.** (English) Zbl 1463.60007

Visn. Khark. Univ., Ser. Mat. Prykl. Mat. Mekh. 89, 4-9 (2019).

Summary: Let $P$ be a probability distribution on a finite group $G$, let $U(g) = \frac{1}{|G|}$ be the uniform (trivial) probability distribution on the group $G$, and let $P^{(n)} = P * \ldots * P$ be $n$-fold convolution of $P$. A lot of estimates of the rate of convergence $P^{(n)} \to U$ are found in different norms. There are well known conditions under which $P^{(n)} \to U$ as $n \to \infty$. In the paper convergence with respect to the norm $\|F\| = \sum_{g \in G} |F(g)|$, where $F(g)$ is a function on group $G$, is considered. The rate of convergence of convolution $P^{(n)} \to U$ is given. It turns out that the norm of the difference $\|P^{(n)} - U\|$ is determined by the order of the group, degree the group as a substitution group, and the number of regular substitutions in the group. Special cases are considered: the symmetric group, the alternating group, the Zassenhaus group, and the Frobenius group of order $p(p-1)$ with the Frobenius core of order $p$ ($p$ is a prime number).

**MSC:**

60B15 Probability measures on groups or semigroups, Fourier transforms, factorization
60B10 Convergence of probability measures

**Keywords:**

random walks; finite group; convergence; convolution

**Full Text:** Link