Sakhanenko, A. I.

The convergence rate in the invariance principle for differently distributed variables with exponential moments. (Russian) Zbl 0541.60024

Predel'nye Teoremy dlya Summ Sluchajnykh Velichin, Tr. Inst. Mat. 3, 4-49 (1984).

Let (η_j) be a sequence of normally distributed r.v.'s with $E\eta_j = 0$ and $E\eta_j^2 < \infty$. Let $F_j(x)$ be distribution functions such that $\int xF_j(dx) = 0$, $\int x^2F_j(dx) < \infty$ and for some $\lambda > 0 \lambda \int |x|^3 \exp(\lambda|x|)F_j(dx) \leq \int x^2F_j(dx) \quad \forall j$. The sequence of independent r.v.'s (ξ_j) with distribution functions $(F_j(x))$ and such that $E\exp(e\lambda\Delta_n) \leq 1+\lambda B_n$, where $c > 0$ is some absolute constant, $B_n^2 = \sum_{j\leq n} D\xi_j$, $\Delta_n = \max_{m\leq n} |\sum_{j\leq m} \xi_j - \sum_{j\leq m} \mu_j|$, is constructed. This result generalizes the earlier one of *J. Komlos, P. Major*, and *G. Tusnady,* Z. Wahrscheinlichkeitstheor. Verw. Geb. 34, 33-58 (1976; Zbl 0307.60045).

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