

Slepov N. A. (Moscow, Russia). **Some upper bounds in limit theorems for random sums of random variables.**

We employ and modify Stein's method by means of auxiliary techniques, based on centered equilibrium transformation (see [1]), to obtain upper bounds for several types of distance between distributions of random sums of random variables and the Laplace distribution. Developed methods yield optimal estimate in the limit theorem established with ideal metric of order 3 in the case of geometrically distributed number of independent summands. Furthermore, new upper bounds for the Kantorovich distance are more precise, than ones provided in recent papers [1], [2] and [3]. Random sums of dependent random variables are discussed as well.

REFERENCES

1. *Pike J., Ren H.* Stein's method and the Laplace distribution. *ALEA*, 2014, **11**(2) p. 571-587.
2. *Gaunt R. E.* Wasserstein and Kolmogorov error bounds for variance-gamma approximation via Stein's method I. *Journal of Theoretical Probability*, 2018, p. 1-41.
3. *Shevtsova I. G.* Convergence Rate Estimates in the Global CLT for Compound Mixed Poisson Distributions, *Theory Probab. Appl.*, 2018, **63**:1, p. 72-93.

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