

Ivanov D. V. (Moscow, Russia) — **The problems of reachability of the conditional bounds of independent random variables' expected maxima.**

The subject of the presentation is the expected maxima of an arbitrary number n of random i.i.d. variables. Probability distributions with zero mean and variance of 1 and with given value of the expected maximum of m independent random variables of this distribution are being taken into consideration. The question of reachability of the boundaries obtained in [1] is investigated. In cases of failure to derive the answer to this question the obtained boundaries are specified. In addition, the boundaries' reachability condition provided that the expected maxima of m and p random variables are known is examined. The problem might have various applications in queuing theory, insurance, finance and other fields.

REFERENCES

1. *Grigoryeva M.*, Conditional boundaries of risk measure in financial mathematics. Modern Problems of Mathematics and Mechanics, 2015, 10(3), pp. 63–81.
2. *Hartley H.O., David H.A.*, Universal bounds for mean range and extreme observation. The Annals of Mathematical Statistics, 1954, Vol. 25, pp: 85–99.
3. *Balakrishnan N.*, Improving the Hartley-David-Gumbel bound for the mean of extreme order statistics. Statistics and Probability Letters 9, 1990, pp. 291–294.