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On accompanying measures and asymptotic expansions in limit theorems for maximum of random variables

Joint talk with Yu. A. Scherbakova (Lomonosov Moscow State University)

Abstract

A sequence of accompanying laws is suggested in the limit theorem of B. V. Gnedenko for maximums of independent random variables belonging to maximum domain of attraction of the Gumbel distribution. It is shown that this sequence gives an exponential power rate of convergence whereas the Gumbel distribution gives only a logarithmic rate. As examples, classes of Weibull and log-Weibull type distributions are considered in details. A scale for the Gumbel maximum domain of attraction is suggested as a continuation of the considered two classes.