Limit theorems for the domain of geometric partial attraction of semistable laws

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The concept of a semistable distribution appeared first in 1937 in Paul Lévy's fundamental work. The semistable distributions were described by Kruglov. A description of the domain of geometric partial attraction of a semistable law was obtained by Grinevich and Khokhlov. In Csörgő and Megyesi [2] the theory of semistable laws was studied in the framework of the 'probabilistic' approach. In the case of distributions being in the domain of geometric partial attraction of a semistable law ordinary convergence in distribution takes place only along some subsequences. However, a merge theorem is valid (see [2]). We say that two sequences $\{\mu_n\}$ and $\{\nu_n\}$ of probability measures are merging if $\lim_{n\to\infty} \varrho(\mu_n, \nu_n) = 0$ where ϱ is a distance of probability measures. Moreover, in Berkes, Csáki, Csörgő and Megyesi [1] an almost sure limit theorem was proved for laws being in the domain of geometric partial attraction of a semistable law. The almost sure limit theorem is valid with the usual weights. We study functional versions of the above mentioned results (see [3]).

References

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