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12. Probability and Statistics

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Asymptotic Properties of Stable Processes and Fields

Integral test approach is used to investigate the asymptotic behaviour of the stable processes and fields $X_{\alpha,\beta}(t)$, $t \in R_+^q$, $q \geq 1$ as well as a growth rate of their increments. The main attention is focused on the case $\alpha \in (1, 2)$, $\beta = |1|$. Various modifications of the LIL and Erdös - Renyi strong law are proved. Consequences for moving averages will be presented. The strong invariance principle gives the possibility to extend the mentioned results on the behavior of the partial sums of random variables attracted to the corresponding stable law. Applications to statistical inference will be discussed.

Reference: N. M. Zinchenko, Strong invariance principle for sums of random vectors from the domain of attraction of a stable law, *Theor. Probab. and Math. Statist.* **53**, (1995), 51-57.