

Almost sure Central Limit Theorem for subsequences

Konrad Szuster

Maria Curie–Skłodowska University, Lublin, Poland

Abstract

The aim of the speech is to present the almost sure central limit theorem (ASCLT) for sequences of independent, nonidentically distributed random variables. Let $S_n, n \geq 1$ be a partial sum of the sequence of independent random variables with zero mean and finite variances and let $a(x)$ be the real function, satisfying certain conditions. Starting from the functional version of ASCLT we will arrive at the ASCLT presenting sufficient conditions, under which

$$\lim_{N \rightarrow \infty} \frac{1}{N} \sum_{k=1}^N a\left(S_{n_k}/(ES_{n_k}^2)^{1/2}\right) = \int_{-\infty}^{\infty} a(x)d\Phi(x), \quad P\text{-p.p.}$$

The method of constructing subsequences $\{n_k, k \geq 1\}$ will be shown.

Keywords

Almost sure central limit theorem, Functional central limit theorem.

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