# Almost sure central limit theorems for sums of a randomly chosen multi-index field

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**Abstract.** We prove an almost sure version of a central limit theorem (ASCLT), using means with arbitrary weights and sums of randomly chosen random variables (random subsequences) from multi-index field.

The ASCLT for sums of random subsequences is a nontrivial generalization of the one for randomly indexed sums. This case was considered for randomly indexed multi-index fields with logarithmic means, for example, for random maximum limit theorem in [11], and for randomly indexed sums in the functional form in [4]. The case of ASCLT and other limit theorems for randomly chosen summands was not considered yet.

In the case of sums of random subsequences even typical limit theorems are very hard to obtain. The main difficulty lies in the fact that we have to consider all possible subsequences of random variables.

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