

## Some LIL type results on the partial sums and trimmed sums with multidimensional indices

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### Abstract

Let  $\{X, X_n; n \in \mathbb{N}^d\}$  be a field of i.i.d. random variables indexed by  $d$ -tuples of positive integers and let  $S_n = \sum_{k \leq n} X_k$ . We prove some strong limit theorems for  $S_n$ . Also, when  $d \geq 2$  and  $h(n)$  satisfies some conditions, we show that there are no LIL type results for  $S_n/\sqrt{|n|h(n)}$

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