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Strong laws of large numbers for fields of Banach space valued random variables. (English)

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The aim of this paper is to give necessary and sufficient conditions for the applicability of the strong law of large numbers (SLLN) to rectangular sums of independent random variables taking values in a real separable Banach space B . The basic tool is a Prokhorov-type criterion about the SLLN which is independent on the geometry of B , but is strongly dependent on the form of the norming constants. This criterion is applied in order to prove a general SLLN for weighted sums and Marcinkiewicz-Zygmund laws.

The connection between the geometry of B and the SLLN for several norming constants is also investigated.

MSC:

- 60B12** Limit theorems for vector-valued random variables (infinite-dimensional case)
- 60G60** Random fields
- 60F15** Strong limit theorems

Cited in **1** Review
Cited in **8** Documents

Keywords:

fields of Banach space valued random variables; strong law of large numbers; weighted sums; Marcinkiewicz-Zygmund laws

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