

The Strong Law of Large Numbers for Extended Negatively Dependent Random Variables with Applications to Risk Theory

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Abstract

A sequence of random variables is said to be extended negatively dependent (END) if the tails of its finite-dimensional distributions in the lower-left and upper-right corners are dominated by a multiple of the tails of the corresponding finite-dimensional distributions of a sequence of independent random variables with the same marginal distributions. Our goal is to establish the strong law of large numbers for a sequence of END and identically distributed random variables. In doing so we derive some new inequalities of large-deviation type for the sums of END and identically distributed random variables being suitably truncated. Applications of our main result to risk theory are presented.

This talk is based on a joint work with Anyue Chen and Kai W. Ng.