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ON THE LAWS OF LARGE NUMBERS IN POSSIBILISTIC THEORY*

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Abstract

In this paper we obtain some possibilistic variants of the probabilistic laws of large numbers, different from those obtained by other authors, but very natural extensions of the corresponding ones in probability theory. Our results are based on the possibility measure and on the "maxitive" definitions for possibility expectation and possibility variance. In the frame of this paper, we have only strong law of large numbers, because the weak form of the law of large numbers, will always imply the strong law of large numbers.

AMS 2000 Mathematics Subject Classification: 28A10, 28E10, 60F05, 60F15, 60E15.

keywords: Theory of possibility, possibility measure, possibility expectation, possibility variance, possibilistic Borel-Cantelli lemma, possibilistic laws of large numbers.

1 Introduction

It is well known the fact that possibility theory is an alternative theory to the probability theory, dealing with certain types of uncertainty and treatment of incomplete information (see, e.g., [8] or [4]). In the possibilistic models, all the probabilistic indicators (like expected value, variance, probability measure, etc) are replaced with suitable possibilistic indicators.

Variants of the classical laws of large numbers in probability theory, were studied in the general setting of some non-additive set functions in a large

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