

ON THE SEQUENCES WHOSE CONDITIONAL EXPECTATIONS CAN
APPROXIMATE ANY RANDOM VARIABLE

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Abstract: Let $(\Omega, \mathfrak{F}, P)$ be a non-atomic probability space. For a given sequence (X_n) of random variables we indicate a number of conditions which imply that for any random variable Y there exists a sequence (\mathfrak{U}_n) of σ -fields satisfying $E(X_n | \mathfrak{U}_n) \rightarrow Y$ a.s. In particular, we formulate a sufficient condition using the distributions of X_n 's only.

2000 AMS Mathematics Subject Classification: 60A10.

Key words and phrases: Conditional expectation, almost sure convergence.

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