

Dedicated to Professor Ioan A. RUS on the occasion of his 70th anniversary

About the orthogonal relations in the statistical estimation

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ABSTRACT. Let $X, Y \in L^2(\Omega, K, P)$ be a pair of random variables, where $L^2(\Omega, K, P)$ is the space of random variables with finite second moments. If we suppose that X is an observable random variable but Y is not, than we wish to estimate the unobservable component Y from the knowledge of observations of X using a linear or nonlinear function of them. In this paper, using some definitions and properties of the linear mean-square estimation as well as the orthogonality principle we present some implications of them in the statistical estimation.

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