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ESTIMATION OF SET-INDEXED STOCHASTIC PROCESS ON INCREASING SEQUENCES

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Abstract

In this article, we present the estimation of a set indexed stochastic process. We present two estimates of the stochastic process:

(a) Estimation by another set indexed stochastic process. We prove that a square-integrable set-indexed stochastic process is a weak estimation if and only if its projection on all the strict increasing continuous paths are one-parameter estimation.

(b) Estimation (by a linear and a nonlinear function of another set indexed stochastic process) of the future value X_B of a set indexed stochastic process $X = \{X_A : A \in \mathbf{A}\}$ in terms of limits of its past X_{A_n}, when $A_n \nearrow B$.

Keywords and phrases: estimation, set indexed stochastic process, flow, increasing path, mean square estimation.