STATISTICAL CAUSALITY AND SEPARABLE PROCESSES

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Abstract

In this paper we consider the statistical concept for continuous-time stochastic processes, which is based on Granger's definition of causality. We, also, show that separability is directly related to causality concepts. More precisely, we provide necessary conditions, in term of statistical causality, for the space $L^p(\Omega, \mathcal{G}_\infty, P)$ to be separable. The concept of statistical causality is related to the notion separability of stochastic processes, too.

Keywords: Filtration, causality, separable σ-algebra, separable process.
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