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On the effectiveness in a problem of nonlinear prognosis and filtration. (Russian. English summary) [Zbl 0553.60046](#)

Soobshch. Akad. Nauk Gruz. SSR 114, 269-272 (1984).

Let $\zeta = \phi(\eta)$, $\xi_t = \phi_t(\eta_t)$, $t \in T$, where $\phi(\cdot)$, $\phi_t(\cdot) \in L_2(d\Phi)$ with the standard normal distribution Φ and η , η_t , $t \in T$, is a Gaussian system of random variables with parameters in $(0,1)$. The question of finding the best (in the mean square sense) linear and nonlinear estimations of a random variable ζ (when the η_t , $t \in T$, system is observed) and the character change of the \bar{D}/\tilde{D} relation are studied, where \bar{D} is the mean square error of linear estimation, and \tilde{D} is the mean square error of nonlinear estimation.

MSC:

60G35 Signal detection and filtering (aspects of stochastic processes)

60G15 Gaussian processes

93E10 Estimation and detection in stochastic control theory

Keywords:

estimations of a random variable; mean square error of linear estimation; mean square error of nonlinear estimation