

**Dobrovidov, A. V.**

**Convergence rates of nonparametric filtering estimates in autoregression dynamic systems.**

(English. Russian original) [Zbl 1117.62489](#)

[Autom. Remote Control 64, No. 1, 49-64 \(2003\)](#); translation from *Avtom. Telemekh.* 2003, No. 1, 56-73 (2003).

Summary: The Bayes problem of filtration of a random process from observations on an autoregression process with coefficients defined by functions of the useful signal is studied. The main assumption asserts that the conditional observation densities belong to a family of conditional exponential densities with known functions of observations and useful signal, whose distribution is not known in advance. Optimal signal filtering equations and empirical risk estimates are derived. Regularized nonparametric filtering estimates are derived and a theorem on the mean-square convergence and convergence rates of these estimates is formulated.

**MSC:**

[62M20](#) Inference from stochastic processes and prediction

[62G05](#) Nonparametric estimation

[94A12](#) Signal theory (characterization, reconstruction, filtering, etc.)

[62M10](#) Time series, auto-correlation, regression, etc. in statistics (GARCH)

Cited in **1** Document

**Full Text:** [DOI](#)