

SEQUENTIAL ESTIMATION FOR THE SPECTRAL DENSITY
PARAMETER OF A STATIONARY GAUSSIAN PROCESS

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Abstract: In this paper we consider the problem of sequential estimation for the stationary zero - mean Gaussian process whose spectral density is of the form $[2\pi(\lambda^2 + \vartheta^2)]^{-1}$, where $\vartheta > 0$ is an unknown parameter. We find the class of Markov stopping times determining optimal sequential estimation plans for a given function $g(\vartheta)$. A sequential plan is optimal if the lower bound in the information inequality is attained. Moreover, the form of efficient sequential estimators is derived and the class of efficiently estimable functions is investigated.

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