Some comparison theorems for minimax detection of Gaussian stochastic signals

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Abstract

Minimax detection of Gaussian stochastic signal embedded in white Gaussian noise is investigated. It is assumed that the stochastic signal correlation function belongs to a given set $\mathcal{A}$. We are interested in: when it is possible to replace the whole set $\mathcal{A}$ by a single element $a \in \mathcal{A}$ without essential loss of performance?

Several comparison theorems allowing such reduction of the set $\mathcal{A}$ will be presented.