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Universal Detection of Messages via Finite–State Channels

Neri Merhav

Department of Electrical Engineering
Technion - Israel Institute of Technology
Haifa 32000, Israel

Abstract

We propose a universal, asymptotically optimum decision rule for deciding whether or not an observed sequence generated at the output of an unknown finite–state channel corresponds to a given channel–input message. The hypothesized message is tested against a certain alternative message or several alternative messages under the Neyman–Pearson criterion.