Exponential Rates for the Error Probabilities in Selection Procedures.

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Abstract: For a sequence of statistical experiments with a finite parameter set the asymptotic behavior of the maximum risk is studied for the problem of classification into disjoint subsets. The exponential rates of the optimal decision rule is determined and expressed in terms of the normalized limit of moment generating functions of likelihood ratios. Necessary and sufficient conditions for the existence of adaptive classification rules in the sense of [A.L. Rukhin: Adaptive procedure for a finite numbers of probability distributions. Statist. Decis. Theory Related Topics III. 2 (1982), 269–285.] are given. The results are applied to the problem of the selection of the best population. Exponential families are studied as a special case, and an example for the normal case is included.

Keywords:

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