

可靠性

Bayes序贯试验方法中风险的选择与计算

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摘要:

对Bayes序贯试验方法中弃真和采伪风险的计算进行论述, 给出决策常数的计算公式。分别对经典风险、平均风险和Bayes风险的计算公式进行推导, 给出了三者之间的递推计算关系。在给定Bayes风险条件下, 对序贯后加权检验和Bayes序贯概率比检验, 推导了决策常数的计算公式。对现有Bayes方法应用中, 两类风险选择所存在的问题进行分析, 给出风险选择的准则和解决方案, 并给出决策常数的准确计算公式。最后, 给出一个示例, 说明该方法的有效性。

关键词: Bayes方法 序贯试验 风险 决策常数

Selection and calculation of risks in Bayes sequential test method

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Abstract:

The calculation of producer's risk and consumer's risk in Bayes sequential test method is discussed, and the formulas of decision constants are deduced. The formulas of classical risk, average risk and Bayesian risk are deduced, and the recursive calculation relationship among three types of risk is presented. For sequential posterior odd test and sequential probability ratio test, the calculation formulas of decision constants are deduced for given Bayesian risk. The shortcomings and problems in the selection of two types of risk in the engineering application of Bayesian method are analyzed, the principle and solution of risks selection are given, and the exact calculation formulas of decision constants are presented. Finally, an example is given to show the validation of the proposed method.

Keywords: Bayes method sequential test risk decision constant

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