短文

4状态可修系统的可靠性和检测策略研究

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摘要
研究4状态检测系统的一个模型, 假定系统有4种运行状态：正常、异常、隐患和故障, 其中故障状态不需检测便可发现, 正常、异常和隐患均为工作状态, 需经过检测才能发现. 当系统工作时, 每隔一段随机时间对它检测一次, 直到系统故障或检测出系统处于隐患状态为止. 利用概率分析和补充变量方法, 研究了系统的可靠性指标和最优检测周期.
关键词　可靠性　检测　系统
分类号

Reliability and Check Study of a Four-Mode System

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Abstract
This paper deals with the reliability and check study of a four-mode system. The system has four modes--normal, abnormal, hidden fault and failure. When the system is in the failure mode, it can be detected without any check. Only after checking can it be known whether the system is in the normal, abnormal or hidden fault. When the system is operating, it is checked once every random time period until it attains the failure mode or it is detected to be in the hidden fault mode by checking. The reliability indices and the optimal checking cycle of the system are obtained by using probability analysis and the supplementary variable technique.
Key words　Reliability　check　system

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