

论文

## 多值逻辑函数与其变元的几种无关性的谱分析

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摘要

多值逻辑函数与它们的变元之间有许多种特殊关系, 单从它们的表达式是较难判断的。本文给出了多值逻辑函数与其变元无关和统计无关的一些充分必要条件; 给出了多值逻辑函数与其某些变元代数无关(也称为退化)的一些条件和最大程度地退化一个函数的方法; 指出了这些结果在实际中的应用。所有这些结果都是 Chrestenson 谱方法来研究的。

关键词 [多值逻辑函数](#) [Chrestenson 谱](#) [退化](#) [相关免疫](#) [线性码](#)

分类号

## SPECTRAL ANALYSIS OF SOME INDEPENDENCES OF MULTIPLE-VALUED LOGICAL FUNCTIONS FROM THEIR VARIABLES

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Abstract

There are many kinds of special relationships between multiple-valued logical functions and their variables, and it is difficult to be judged from their expressions. In this paper, some sufficient and necessary conditions of the independence and statistical independence of multiple-valued logical functions from their variables are given. Some conditions of algebraic independence of multi-valued logical functions from some of their variables and the way to degenerate a function to the greatest extent are proposed, and some applications of these results are indicated. All the results are studied by using Chrestenson spectral techniques.

Key words [Multiple-valued logical function](#) [Chrestenson spectrum](#) [Degeneration](#) [Correlation-immune](#) [Linear code](#)

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