第一图书网, tushu007.com

<<矩阵结合方案>>

图书基本信息

书名：<<矩阵结合方案>>

13位ISBN编号：9787030266163

10位ISBN编号：7030266161

出版时间：2010-1

出版时间：科学出版社

作者：Yanchao Zhao 著

页数：234

译者：Jianmin Ma

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：http://www.tushu007.com

第一图书网, tushu007.com

前言

The concept of the association scheme together with partially balanced incomplete blockdesigns was defined in its own right by R. C. Bose and T. Shimamoto in 1952. It wasintroduced to describe the balance relations among the treatments of partially balanced in-complete block designs. Association schemes have close connections with coding theory,graph theory, and finite group theory, and in particular, provide a framework for studyingcodes and designs. By the 1980s, association scheme theory was an important branch ofalgebraic combinatorics, and the research work on association scheme theory had growntremendously.The study of association schemes in China was started by Professors L. C. Chang andPao-Lu Hsu in the late 1950s. Later, my students and I began to construct associationschemes and block designs using various subspaces of vector spaces under the action ofclassical groups. These results were collected in the monograph Studies in Finite Geome-tries and the Construction of Partially Incomplete Block Designs by Z. Wan, Z. Dai, X.Feng, and B. Yang published by Science Press （Beijing, 1966）. In the mid-1960s, I con-structed a family of association schemes on Hermitian matrices and computed the param-eters of the lower dimensional ones [20] and started a new direction of construction ofassociation schemes on matrices. The association scheme theory developed later indicatesthat the association schemes of maximal totally isotropic subspaces and of Hermitian ma-trices are known as primitive P- and O-polynomial association schemes.

第一图书网, tushu007.com

<<矩阵结合方案>>

内容概要

本书论述有限域上各类典型矩阵在群作用下构作的结合方案，其内容主要包括有限域上的长方矩阵、交错矩阵、Hermite矩阵、对称矩阵和二次型构作的结合方案，导出各类结合方案的一般参数计算公式，讨论这些结合方案的本原性、对偶性、P多项式等基本性质以及自同构群。
书中还特别论述了特征数为2时二次型结合方案的特征值及其聚合方案的对偶方案。
该书可供各大专院校作为教材使用，也可供从事相关工作的人员作为参考用书使用。

第一图书网, tushu007.com

<<矩阵结合方案>>

书籍目录

Note from the TranslatorPrefaceForeword to the Chinese EditionList of SymbolsChapter 1 Basic Theory of Association Schemes 1.1 Definition of Association Scheme 1.2 Examples 1.3 The Eigenvalues of Association Schemes 1.4 The Krein Parameters 1.5 S-Rings and Duality 1.6 Primitivity and Imprimitivity 1.7 Subschemes and Quotient Schemes 1.8 The Polynomial Property 1.9 The AutomorphismsChapter 2 Association Schemes of Rectangular Matrices 2.1 Definition and Primitivity 2.2 The Polynomial Property of Association Schemes of Rectangular Matrices. 2.3 Recurrence Formulas for Intersection Numbers 2.4 The Duality of Association Schemes of Rectangular Matrices 2.5 The Automorphisms ofMat(m × n,q)Chapter 3 Association Schemes of Alternate Matrices 3.1 Primitivity and P-polynomial Property 3.2 The Parameters of Γ(1) 3.3 Recurrences for Intersection Numbers 3.4 Recurrences for Intersection Numbers: Continued 3.5 The Self-duality of Alt(n,q) 3.6 The Automorphisms of Alt(n,q)Chapter 4 Association Schemes of Hermitian Matrices 4.1 Primitivity and P-polynomial Property 4.2 The Parameters of Graph Γ(1) 4.3 Recurrences for Intersection Numbers 4.4 Recurrences for Intersection Numbers: Continued 4.5 The Self-duality of Her(n,q2) 4.6 The Automorphisms of Her(n,q2)Chapter 5 Association Schemes of Symmetric Matrices in Odd Characteristic 5.1 The Normal Forms of Symmetric Matrices 5.2 The Association Schemes of Symmetric Matrices and Their Primitivity 5.3 Sym(n,q) for Small n 5.4 A Few Enumeration Formulas from Orthogonal Geometry 5.5 Calculation of Intersection Numbers 5.6 Calculation of Intersection Numbers: Continued 5.7 The Association Scheme Quad(n,q) 5.8 The Self-duality of Sym(n,q) 5.9 The Automorphisms of Sym(n,q)Chapter 6 Association Schemes of Symmetric Matrices in Even Characteristic 6.1 The Normal Forms of Symmetric Matrices 6.2 The Imprimitivity of Sym(n,q) 6.3 The Association Scheme Sym(2,q) 6.4 Some Results of Pseudo-symplectic Geometry 6.5 Calculation of Intersection Numbers 6.6 Calculation of Intersection Numbers: Continued 6.7 A Fusion Scheme of Sym(n,q) 6.8 The Automorphisms of Sym(n,q)Chapter 7 Association Schemes of Quadratic Forms in Even Characteristic--. 7.1 The Normal Forms of Quadratic Forms 7.2 Qua(2,q) and Qua(3,q) 7.3 Some Enumeration Formulas from Orthogonal Geometry 7.4 Calculation of Intersection Numbers 7.5 The Duality of Association Schemes of Quadratic Forms 7.6 The Imprimitivity of Association Schemes of Quadratic Forms 7.7 Two Fusion Schemes of Qua(n,q) 7.8 The Automorphisms of Association Schemes of Quadratic FormsChapter 8 The Eigenvalues of Association Schemes of Quadratic Forms 8.1 The Eigenvalues of Association Scheme Qua(2,q) 8.2 Some Lemmas on Additive Characters 8.3 The 1-extensions and fr(n) 8.4 Values of fr(n) on the Union Classes C2i(n) 8.5 The 2-extensions and f2k*(n) 8.6 Values of f2k*(n) on Classes C2i(n) and C2i(n) ∪C2i-1(n) 8.7 Dual Schemes of Two Fusion Schemes of Qua(n,q) 8.8 Eigenvalues of Small Association Schemes of Quadratic FormsReferencesIndex

第一图书网, tushu007.com

章节摘录

插图：The concept of the association scheme together with partially balanced incomplete blockdesigns was defined in its own right by R. C. Bose and T. Shimamoto in 1952. It wasintroduced to describe the balance relations among the treatments of partially balanced in-complete block designs. Association schemes have close connections with coding theory,graph theory, and finite group theory, and in particular, provide a framework for studyingcodes and designs. By the 1980s, association scheme theory was an important branch ofalgebraic combinatorics, and the research work on association scheme theory had growntremendously.The study of association schemes in China was started by Professors L. C. Chang andPao-Lu Hsu in the late 1950s. Later, my students and I began to construct associationschemes and block designs using various subspaces of vector spaces under the action ofclassical groups. These results were collected in the monograph Studies in Finite Geome-tries and the Construction of Partially Incomplete Block Designs by Z. Wan, Z. Dai, X.Feng, and B. Yang published by Science Press （Beijing, 1966）. In the mid-1960s, I con-strutted a family of association schemes on Hermitian matrices and computed the param-eters of the lower dimensional ones [20] and started a new direction of construction ofassociation schemes on matrices. The association scheme theory developed later indicatesthat the association schemes of maximal totally isotropic subspaces and of Hermitian ma-trices are known as primitive P- and Q-polynomial association schemes.In the late 1970s, Professor Yangxian Wang continued the study of association schemesof matrices. He derived formulas for the parameters of association schemes of Hermitianmatrices and constructed association schemes using rectangular matrices and alternate ma-trices. Later, Professors Yuanji Hut, Xueli Zhu and I studied the association schemes ofsymmetric matrices in odd characteristic. In the 1990s, Professor Yangxian Wang and hisstudents Jianmin Ma and Changli Ma at that time studied the association schemes of sym-metric matrices and quadratic forms in even characteristic. Besides the parameters of theseassociation schemes, they discussed the subschemes, quotient schemes, and duality andautomorphisms. S.o the study of association schemes of matrices has reached a more com-plete stage. In this monograph, Professors Yangxian Wang, Yuanji Hut, and Dr. ChangliMa collect the results on association schemes of matrices in a systematic way. The aimof this monograph is to study the association schemes of matrices, including construction,parameter calculation, primitivity, duality, automorphisms and polynomial properties, etc.I hope this monograph will provide readers with some methods and tools to study associ-ation schemes and bring new results.

第一图书网, tushu007.com

编辑推荐

《矩阵结合方案(英文版)》是由科学出版社出版的。

第一图书网, tushu007.com

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:http://www.tushu007.com