

Preface

Special Issue: Designs, Codes, Graphs and Cryptography

There have been considerable advances in the areas of designs, codes, graphs and cryptography in the past decade. In order to showcase some of the recent developments, we decided to devote an issue of Communications in Mathematical Research (CMR) to these areas.

This special issue contains eight papers, which cover a wide range of topics in the areas of designs, codes, graphs and cryptography.

- Partial Difference Sets:

On the Nonexistence of Partial Difference Sets by Projections to Finite Fields

Yue Zhou

- Factoring of Finite Groups by Subsets:

Some New Results on Purely Singular Splittings

Pingzhi Yuan

- Coding Theory:

Subfield Codes of Linear Codes from Perfect Nonlinear Functions and Their Duals

Dabin Zheng, Xiaoqiang Wang, Yayao Li and Mu Yuan

Finite Geometry and Deep Holes of Reed-Solomon Codes over Finite Local Rings

Jun Zhang and Haiyan Zhou

- Exponential Sums:

A Recursive Formula and an Estimation for a Specific Exponential Sum

Xiwang Cao and Liqin Qian

- Cryptographic Functions:

On the Differential Uniformity and Nonlinearity of a Class of Permutation Quadrinomials Over \mathbb{F}_{2^m}

Mengyu Hu, Nian Li and Xiangyong Zeng

- Cyclotomic Mappings:
Generalized Cyclotomic Mappings: Switching Between Polynomial, Cyclotomic, and Wreath Product Form
Alexander Bors and Qiang Wang
- Algebraically Defined Graphs:
On Jumped Wenger Graphs
Li-Ping Wang, Daqing Wan, Weiqiong Wang and Haiyan Zhou

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