

Editor's note.

Special issue algebraic coding theory: New trends and its connections

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Dear Colleagues

The purpose of this special issue of Journal of Algebra, Combinatorics, Discrete Structures and Applications was to collect a sample of papers in active areas of research in algebraic coding theory and its connections to other areas. A number of researchers submitted manuscripts to the special issue. After a thorough review process, six articles have been selected to appear in the special issue. We thank all researchers who submitted an article. Their contributions are sincerely appreciated, regardless of whether they have been accepted for publication or not. We are particularly grateful to our small number of dedicated reviewers who did a meticulous job of reviewing in a short period of time.

The articles selected for this special issue are a representative sample of the current research trends in algebraic coding theory. In their article "Construction of quasi-twisted codes and enumeration of defining polynomials", Gulliver and Venkaiah enumerate all twistulant matrices of a given size and use that information to construct quasi-twisted (QT) codes with better parameters and they start new databases over $GF(17)$ and $GF(19)$. QT codes have been studied extensively in coding theory and they continue to yield useful results.

In the article "Locally recoverable codes from planar graphs" Haymaker and O'Pella construct codes that are locally recoverable from 3-connected regular and almost regular graphs. Furthermore, they present methods of constructing regular and almost regular planar graphs.

In the paper "Constructions of MDS convolutional codes using superregular matrices", Lieb and Pinto show how to obtain MDS convolutional codes from superregular matrices with certain properties. They provide explicit ways of constructing generator matrices of MDS convolutional codes from superregular matrices.

In the paper titled "G-codes over formal power series rings", Korban et al. introduce G-codes over an infinite ring, using tools from group rings. They study the duality properties of these codes and show that their projections are G-codes over finite chain rings. They prove similar results for the lifts of codes over finite chain rings as well.

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In " $Z_q(Z_q + uZ_q)$ -linear skew constacyclic codes", Melakhessou et al. consider $Z_q(Z_q + uZ_q)$ skew constacyclic codes where q is a prime power and $u^2 = 0$. They describe the generator polynomials, the minimal spanning sets, and sizes of these codes. They also obtain some new Z_4 -codes from the Gray images of these codes.

In "Weight distributions of some constacyclic codes over a finite field and isodual constacyclic codes", Singh describes the weight distribution of a family of constacyclic codes over F_q . Singh also constructs a family of non-binary isodual-constacyclic codes of a special length and gives specific examples of the constructions.

Algebraic Coding Theory continues to be an active area of research with many theoretical and applied aspects. We believe that this special issue will help disseminate recent results to a broad audience in an open access journal and promote further research.