



FATİH UNIVERSITY

Department of Mathematics

Seminars on

Codes, Cryptography and Combinatorics

Dear Colleagues,

You are cordially invited to attend the following seminar organized by the department of mathematics.

Speaker : Assist. Prof. İsmail Gökhan KELEBEK

Title : The Homogeneous Weight for R_k , Related Gray Map and New Binary Quasicyclic Codes

Abstract : Using theoretical results about the homogeneous weights for Frobenius rings, we describe the homogeneous weight for the ring family R_k a recently introduced family of Frobenius rings which have been used extensively in coding theory. We find an associated Gray map for the homogeneous weight, using first order Reed-Muller codes and we describe some of the general properties of the images of codes over R_k under this Gray map. We then discuss quasitwisted codes over R_k and their binary images under the homogenous Gray map. In this way, we find many optimal binary codes which are self-orthogonal and quasicyclic. In particular, we find a substantial number of optimal binary codes that are quasicyclic of index 8, 16 and 24, nearly all of which are new additions to the database of quasicyclic codes kept by Chen.

Date : May 7, Thursday

Time : 13:00

Room : A-324

Next Speaker : Assoc. Prof. Suat KARADENİZ