

SEMINARIO

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Evaluation codes from the weighted projective plane

Abstract: This talk is dedicated to the study of weighted projective Reed-Muller (WPRM) codes on weighted projective planes $P(1,a,b)$. These codes are formed by the evaluations of weighted-degree- d polynomials at the set Y of F_q -rational points of $P(1,a,b)$. To handle the dimension and the minimum distance of these codes, we rely on combinatorial techniques, coming from the toric geometry. We also determine the regularity set of Y using this novel combinatorial approach. We notably employ footprint techniques to compute the minimum distance, highlighting some limits of this method.

This talk is based on a joint work with Yağmur Çakıroğlu and Mesut Şahin (arXiv:2410.11968).

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