

ON PROJECTIVE REED-MULLER TYPE CODES DEFINED ON SCROLLS

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Projective Reed-Muller codes were introduced by Lachaud in 1988, and they are obtained by evaluating the space of homogeneous polynomials of a fixed degree d on the points of $\mathbb{P}^n(\mathbb{F}_q)$. In this talk we will present another class of codes, defined by evaluating the same space of polynomials on the points of a higher dimensional scroll, a variety obtained from a set of rational normal curves contained in complementary linear subspaces of a projective space. We determine a formula for the dimension of the codes, and the exact value of the minimum distance in some special cases. This is a joint work with Victor G.L. Neumann, Xavier Mondragón and Horacio Tapia-Recillas.