

SEMINARIO

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Classical and quantum evaluation codes at the trace roots

Abstract: We introduce a new class of evaluation linear codes by evaluating polynomials at the roots of a suitable trace function. We give conditions for self-orthogonality of these codes and their subfield-subcodes with respect to the Hermitian inner product. They allow us to construct stabilizer quantum codes over several finite fields which substantially improve the codes in the literature and that are records for the binary case. Moreover, we obtain several classical linear codes over the finite field with 4 elements which are records. Joint work with Carlos Galindo and Fernando Hernando.

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