Toric Surface Codes and Minkowski Length of Polygons
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ABSTRACT

A toric surface code is a linear error-correcting code obtained by evaluating bivariate polynomials with prescribed monomial vectors at all points of $F_q^2$ whose both coordinates are non-zero. We have obtained new bounds for the minimum distance (a parameter that characterizes code’s reliability) of a toric code in terms of the geometry of the exponent vector configuration. This is a joint project with Ivan Soprunov.