Lower and upper bounds for the size of maximal partial ovoids of orthogonal polar spaces

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The orthogonal polar spaces are the non-singular parabolic quadrics $\mathrm{Q}(2n,q)$, $n \geq 2$, the non-singular elliptic quadrics $\mathrm{Q}^-(2n+1,q)$, $n \geq 2$, and the non-singular hyperbolic quadrics $\mathrm{Q}^+(2n+1,q)$, $n \geq 1$. A *maximal partial ovoid* of such a polar space is a set O of points such that every generator contains at most one point, with the property that O cannot be extended.

We present lower and upper bounds for the size of a maximal partial ovoid of particular orthogonal polar spaces.