

On the slices of the Unitary spread of $\mathcal{Q}^+(7, q), q = 2^{2h+1}$

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Let $\mathcal{Q} = \mathcal{Q}^+(2n + 1, q)$ be a hyperbolic quadric of $PG(2n + 1, q)$, where n is odd and q even. In [1] and [2], the authors show a simple way to obtain symplectic spreads of $W(2n - 1, q)$, hence translation planes, from an orthogonal spread of \mathcal{Q} .

In [3], the author describes the four classes of non-isomorphic symplectic spreads coming from the Desarguesian spread of \mathcal{Q} , the so called *cousins* of the Desarguesian spread. In the same article, he gives three examples of non-isomorphic symplectic spreads coming from the Unitary spread of $\mathcal{Q}^+(7, q), q = 2^{2h+1}, h > 1$.

In this seminar I will show that from the Unitary spread of \mathcal{Q} we get five classes of non-isomorphic symplectic spreads using a construction described in [4], that links a non-singular hermitian curve of $PG(2, q^2)$ and a Unitary ovoid of $\mathcal{Q}^+(7, q), q \equiv 2 \pmod{3}$.

References

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- [3] W.M. Kantor, Spreads, translation planes and Kerdock sets I, *Siam J. Alg. Disc. Meth* **3** (1982), 151-165.
- [4] G. Lunardon, Normal Spreads, *Geometriae Dedicata* **75** (1999), 245-261.

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