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论文

有限酉群作用下子空间轨道按和生成的格

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摘要：

设$F_{q^2}^{(n)}$是 F_{q^2}上的 n 维行向量空间, $U_n(F_{q^2})$是 F_{q^2}上的 n 阶酉群. 设$M(m, r; n)$是$U_n(F_{q^2})$作用下的一个子空间轨道, $L(m, r; n)$是 $M(m, r; n)$中子空间的和生成的集合.该文讨论了各个轨道生成的集合$L(m, r; n)$之间的包含关系, 给出了一个子空间是属于给定的由$M(m, r; n)$生成的集合$L(m, r, n)$中的一个元素的条件, 以及$L\}(m, r; n)$做成几何格的条件.

关键词： 酉群 酉空间 子空间轨道 几何格

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Lattices Generated by Joins of Elements in Orbits of Subspaces under Finite Unitary Groups

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Abstract:

Let $F_{q^2}^{(n)}$ be the n-dimensional vector space over the finite field F_{q^2} and let $U_n(F_{q^2})$ be unitary group of degree n over F_{q^2} . Let $M(m, r; n)$ be any orbit of subspaces under $U_n(F_{q^2})$. Denote by $L(m, r; n)$ the set of subspaces which are joins of subspaces in $M(m, r; n)$. This paper discusses the relation of inclusion between sets generated by different orbits, the condition that a subspace is an element of set generated by the given orbit, and the condition when sets generated by orbits form geometric lattices.

Keywords: Unitary group Unitary space Orbit of subspaces Geometric lattice

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