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Small doubling in orderable groups: a combinatorial problem

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Abstract

A finite subset S of a group G is said to satisfy the *small doubling property* if $|S^2| \leq \alpha|S|+\beta$, where α and β denote real numbers, $\alpha > 1$ and $S^2 = \{s_1 s_2 \mid s_1, s_2 \in S\}$.

Our aim in this talk is to investigate the structure of finite subsets S of *orderable groups* satisfying the small doubling property with $\alpha = 3$ and small β's, and also the structure of the subgroup generated by S. This is a step in a program to extend the classical Freiman's inverse theorems (see [1]) to nonabelian groups.

References

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