

A Freiman theorem in torsion-free groups

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Let S be a finite subset of a group G and write

$$S^2 = \{xy \mid x, y \in G\}.$$

We are interested in the following problem: find the structure of S if

$$|S^2| \leq \alpha|S| + \beta,$$

where α and β denote real numbers, $\alpha \geq 1$, α and $|\beta|$ small.

Problem of this type are called *inverse problems of small doubling type*, and have been studied by G. Freiman in the group of the integers and by many other authors in abelian groups.

Our aim in this talk is to investigate some inverse problems of small doubling type in some classes of torsion-free non-necessarily abelian groups.

References

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