

# New bounds for spherical two-distance sets

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## Abstract

A spherical two-distance set is a finite collection of unit vectors in  $\mathbb{R}^n$  such that the set of distances between any two distinct vectors has cardinality two. We use the semidefinite programming method to compute improved estimates of the maximum size of spherical two-distance sets. Exact answers are found for dimensions  $n = 23$  and  $40 \leq n \leq 93$  ( except 46, 78), where previous results gave divergent bounds.