

Babenko, Yu. I.; Zalgaller, V. A.**Power invariants of certain point sets.** (English. Russian original) Zbl 1003.51008*J. Math. Sci., New York* 110, No. 4, 2755-2768 (2002); translation from *Zap. Nauchn. Semin. POMI* 261, 7-30 (1999).

Summary: Point sets $\{A_1, \dots, A_n\}$ in \mathbb{R}^d , $d \geq 2$, are considered that have barycenter at the origin and, for a certain collection of even exponents $2, 4, \dots, 2p$, possess “power invariants” I_k in the following sense. Let $S^{d-1}(R)$ be the sphere with center at the origin and radius R and let $M \in S^{d-1}(R)$. Then the sums $I_k(R) = \sum_{i=1}^n |MA_i|^{2k}$, $k = 1, \dots, p$, do not depend on the position of M on $S^{d-1}(R)$.

MSC:

51M04 Elementary problems in Euclidean geometries

52A99 General convexity

Cited in 1 Review

Keywords:point sets in \mathbb{R}^d ; power invariants