

MINKOWSKI CHIRALITY

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We introduce Minkowski chirality, a novel quantity that maps convex bodies to real numbers, quantifying their asymmetry with respect to reflections across subspaces of a given dimension in an optimal containment fashion. Specifically, we define the Minkowski chirality $\alpha_j(K)$ of the convex body $K \subset \mathbb{R}^n$ as the infimum of the circumradii of K with respect to its images under reflections across j -dimensional subspaces of $\mathbb{R}^n$. This extension builds upon the well-known concept of Minkowski asymmetry, which pertains to 0-dimensional subspaces.

In this talk, our focus will be on studying the range of the Minkowski chirality α_1 for two specific types of convex bodies: parallelograms and triangles. We will analyze the optimal subspaces in both cases and identify the convex bodies that exhibit the maximum and minimum values of α_1 within these families.