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The Centroid Banach-Mazur Distance between the Parallelogram and the Triangle

Let C and D be convex bodies in the Euclidean space E^d. We define the centroid Banach-Mazur distance $\delta^{\rm cen}_{BM}(C,D)$ similarly to the classic Banach-Mazur distance $\delta_{BM}(C,D)$, but with the extra requirement that the centroids of C and an affine image of D coincide. We prove that for the parallelogram P and the triangle T in E^2 we have $\delta^{\rm cen}_{BM}(P,T)=\frac{5}{2}$.

Keywords: Banach-Mazur distance, centroid Banach-Mazur distance, convex body, centroid, parallelogram, triangle.

MSC: 52A21; 46B20, 52A10.