

THE MAXIMUM RELATIVE DIAMETER FOR MULTI-ROTATIONALLY SYMMETRIC PLANAR CONVEX BODIES

ANTONIO CAÑETE

Abstract. In this work we study the maximum relative diameter functional d_M in the class of multi-rotationally symmetric planar convex bodies. A given set C of this class is k -rotationally symmetric for $k \in \{k_1, \dots, k_n\} \subset \mathbb{N}$, and so it is natural to consider the standard k_i -partition P_{k_i} associated to C (which is a minimizing k_i -partition for d_M when $k_i \geq 3$) and the corresponding value $d_M(P_{k_i})$. We establish the relation among these values, characterizing the particular sets for which all these values coincide.

Mathematics subject classification (2010): 52A10, 52A40.

Keywords and phrases: k -rotationally symmetric planar convex body, maximum relative diameter.

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