

## On extensions of Grünbaum's inequality

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Given a compact set  $K \subset \mathbb{R}^n$  of positive volume, if  $K$  is convex with centroid at the origin, then, a classical result by Grünbaum says that one can find a lower bound for the ratio  $\text{vol}(K^-)/\text{vol}(K)$  depending only on the dimension of  $K$ , where  $K^-$  denotes the intersection of  $K$  with a halfspace bounded by a hyperplane passing through its centroid.

In this talk, on the one hand, we will give an extensive introduction to Grünbaum's inequality. To this aim, we will pose a question motivating this result to later discuss the fact in which its proof is based on. On the other hand, we will present an overview of our recent results in the spirit of finding generalizations of Grünbaum's inequality, in both a geometric and a functional setting.

The content of this talk is part of joint work with Jesús Yepes Nicolás.

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