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On a generalization of Grünbaum's inequality

Grünbaum's inequality gives sharp volume bounds between a convex body and a division of the body by a hyperplane through its centroid. We provide a generalization of this inequality by looking at divisions of the body by a hyperplane that does not necessarily contain the centroid. As an application, we arrive at a sharp inequality that compares the maximal section(s) of a convex body to any section, which builds on work done by Makai and Martini in 1996. This is joint work with Vlad Yaskin.