SERGII MYROSHNYCHENKO, University of the Fraser Valley

Centroid of a convex body can be rarely the centroid of its sections

We construct a convex body K in $\mathbb{R}^n$, $n \geq 5$, with the property that there is exactly one hyperplane H passing through $c(K)$, the centroid of K, such that the centroid of $K \cap H$ coincides with $c(K)$. This provides answers to questions of Grunbaum and Loewner for $n \geq 5$. The proof is based on the existence of non-intersection bodies in these dimensions. Joint work with K. Tatarko and V. Yaskin.