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Title: An application of curvature flows to the L_0 -Minkowski problem

Abstract: Asymptotic shapes of compact bodies whose boundaries are evolving by curvature flows are often convex bodies with particular properties. By using an appropriate planar curvature flow, we discuss the existence and uniqueness of polygons which are solutions to the discrete L_0 -Minkowski problem. This problem proposed, in a larger generality, by E. Lutwak extends a classical question posed by Minkowski: Let $\mathcal{U} = \{\vec{u}_1, \dots, \vec{u}_N\}$ be an ordered family of directions in \mathbf{S}^1 , not all in a half-disk, and let $\Gamma = \{\gamma_1, \dots, \gamma_N\}$ be an ordered set of strictly positive numbers. Does there exist a convex N -gon such that the side i has outer normal \vec{u}_i and the triangle formed by this side and the origin has area γ_i ?