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Some Sharp Lower Density Bounds for Singularities of Minimal Varieties

OPEN PROBLEMS

- (1) Prove that the Simons cone

$$\{(x, y) \in \mathbb{R}^n \times \mathbb{R}^n = \mathbb{R}^{2n} : |x| = |y|\}$$

has the smallest density at the vertex of any singular minimal hypercone in \mathbb{R}^{2n} .

- (2) Find good lower bounds for densities of minimal (or of area-minimizing) cones with a given codimension > 1 .