Packing cones in space (work joint with A. Bezdek)

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Abstract

One of the basic problems in discrete geometry is to determine the most efficient (densest) packing of congruent replicas of a given convex body in the plane or in space. Several types of the problem arise depending on the kind of isometries allowed for the packing: packing by translations, lattice packing, translations and point reflections, or all isometries. The problem of dense packing of $\mathbb{R}^3$ with cones over a convex disk is the subject of our interest, especially for packing by translations or translations and point-reflections. We state several open problems and present some density bounds.