

# Simple vertices in Minkowski sums of simplices

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## Abstract

A vertex of a  $d$ -dimensional polytope is called *simple* if it is contained in exactly  $d$  facets of the polytope. A theorem by R. Shannon implies that a Minkowski sum of  $n$  line segments (a *zonotope*) has at least  $2n$  simple vertices. We will review proofs of this result and consider generalizations to Minkowski sums of higher dimensional simplices.

**Keywords:** Polytope, simple vertex, Minkowski sum.