

# Convex decompositions of some nonconvex open sets

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## Abstract

We provide convex decompositions for the convex open sets with polytopes or finite sets removed, some of which are minimal in a certain sense. The valence of a function  $f : O \rightarrow \mathbb{R}^n$ , whose restrictions to all convex subsets of  $O \subseteq \mathbb{R}^n$  are injective, cannot exceed the number of convex components of such decompositions. It is therefore worth to investigate the smallest number of convex subsets of  $O$  needed to cover  $O$ . While the convex decompositions of the mentioned open complements are the main issue of this talk, a few remarks on this smallest number are provided by the end of the talk.