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Tverberg Theorems with Altered Nerves.

Tverberg's theorem says that a set with sufficiently many points in \mathbb{R}^d can always be partitioned into m parts so that the $(m-1)$ -simplex is the (nerve) intersection pattern of the convex hulls of the parts. The main results of our paper demonstrate that, Tverberg's theorem is but a special case of a more general situation where other simplicial complexes arise as nerves. We prove that, given sufficiently many points, all trees and cycles, can also be induced by at least one partition of a point set. We also discuss how some complexes cannot be achieved this way, even for arbitrarily large sets of point sets.