

# Shellable complexes and topology of diagonal arrangements

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## Abstract

We prove that if a simplicial complex is shellable, then the intersection lattice for the corresponding diagonal arrangement is homotopy equivalent to a wedge of spheres. Furthermore, we describe precisely the spheres in the wedge, based on the data of shelling. Also, we give some examples of diagonal arrangements whose complement is  $K(\pi, 1)$ , coming from rank 3 matroids.

**Keywords:** , matroid, polytope, shellability.