

Polyhedral Computations
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The Recursive Adjacency Decomposition Method

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Abstract

The Adjacency Decomposition Method is a classical technique for finding the orbits of facets or vertices of a symmetric polytope by a graph traversal algorithm. However, some orbits might be difficult to treat, i.e. their dual description is difficult. The recursive Adjacency method is simply to extend the original algorithm to those orbits.

I will explain how this method has been implemented. Then, I will show some case studies of the method: the perfect domain of E_8 , the Delaunay polytopes of the Coxeter lattices and the Contact Polytope of O_{23} .