1173-05-271 **Jordan Almeter*** (jgalmete@ncsu.edu). *P-Graph Associahedra: A generalization of graph associahedra.*

Graph associahedra are simple polytopes dual to tubing complexes based on graphs, where a tubing consists of compatible connected subgraphs of a graph G. Graph associahedra can be realized by repeatedly truncating faces of a simplex. We generalize graph associahedra to define *P-graph associahedra*, which can be realized by repeatedly truncating faces of a simple polyhedron P.

When P is a hypercube, G is a graph on positive and negative vertices. Hypercube graph tube compatibility is governed by simple rules regarding vertex sign which yield rich combinatorial structure. We show some examples of hypercube-graph associahedra, such as design tubings and the halohedron, and briefly discuss some enumerative methods and results. (Received September 21, 2021)