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Satyan L Devadoss* (devadoss@sandiego.edu) and **Mia Smith**. *Colorful Graph Associahedra*. Preliminary report.

Given a graph G , there exists a simple convex polytope called the graph associahedron whose face poset is based on the connected subgraphs of G . Motivated by ideas in algebraic topology and computational geometry, we define the colorful graph associahedron based on an assignment of a color parameter. We show it to be a simple abstract polytope, provide its construction based on the classical permutohedron and prove various combinatorial and topological properties. (Received September 08, 2016)