

1072-05-140

Marcelo Aguiar, Louis Billera and **Caroline Klivans*** (`cjk@math.uchicago.edu`). *A quasisymmetric function for generalized permutahedra.*

Given a generalized permutahedron, we associate both a quasisymmetric function and a simplicial complex. We prove positivity of the quasisymmetric function in the fundamental basis and positivity of the h-vector of the complex. Further we explore the relationship between these two collections extending a result of Steingrimmson to arbitrary subcomplexes of the Coxeter complex. Our framework includes Stanley's chromatic quasisymmetric function, Steingrimsson's coloring complex, and the Billera-Jia-Reiner quasisymmetric function all as special instances. (Received June 25, 2011)