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Permutahedra and Generalized Associahedra.

Let W be finite Coxeter group. For each orientation of the Coxeter graph of W , we obtain a generalized associahedron (defined by S. Fomin and A. Zelevinsky) from a W -permutahedron by removing some of its facets. This generalize ‘Loday’s realization’ of the associahedron (the generalized associahedron of type A) to finite Coxeter groups

Moreover, the normal fan of the generalized associahedron we obtain is the Cambrian fan associated to the considered orientation, proving therefore N. Reading’s conjecture: any Cambrian fan is polytopal. (Received September 08, 2006)