1167-05-106   **Jose Bastidas*** (`jdb394@cornell.edu`). *Generators for type B permutahedra via McMullen's polytope algebra.* Preliminary report.

Ardila-Benedetti-Doker showed that any generalized permutahedron is a signed Minkowski sum of the faces of the standard simplex. In contrast, Ardila-Castillo-Eur-Postnikov observed that the faces of the cross-polytope only generate a subspace of roughly half the dimension in the space of deformations of the type B permutahedron. In this talk, I will use McMullen's polytope algebra to help explain this phenomenon. Concretely, I will consider the subalgebra generated by (type B) generalized permutahedra and endow it with the structure of a module over the Tits algebra of the corresponding Coxeter arrangement. The module structure surprisingly reveals that any family of generators (via signed Minkowski sums) for generalized permutahedra of type B will contain at least 2^{d-1} full-dimensional polytopes. I will present a family of generators that shows that this lower bound is sharp. (Received February 25, 2021)

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