1135-05-1216   **Federico Castillo** and **Fu Liu*** (`fuliu@math.ucdavis.edu`). *Combinatorics of nested Braid fan.*

Generalized permutohedra are defined as polytopes whose normal fan coarsens the Braid fan Br_d. We wanted to generalize the construction so that edges of direction $e_i + e_j - e_k - e_l$ may appear. In joint work with Castillo, we introduce the nested Braid fan Br_d^2, which is a refinement of Br_d by considering the first difference of ordered coordinates. We show that Br_d^2 is the normal fan of usual nested permutohedra, a subfamily of which is regular nested permutohedra, and thus is a projective fan. We the determine the combinatorics of Br_d^2 or regular nested permutohedra by giving a one-to-one correspondence between cones of Br_d^2 and chains in the poset of ordered partition. (Received September 20, 2017)