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"Colorful Simplicial Depth, Minkowski Sums, and Generalized Gale Transforms"

Abstract for the Combinatorics Seminar 2017 November 14

In this paper (International Mathematics Research Notices, 2017) Adiprasito, Brinkmann, Padrol, Paták, Patáková, and Sanyal give a tight upper bound on the maximum number of colorful simplices that contain the origin, for generic point sets partitioned into color classes centered on the origin. Using a colorful variant of Gale duality, they show that this implies an upper bound on the the number of facets of a Minkowski sum of simplices that arise as the Minkowski sum of a facet of each simplex.
