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**David Rolnick\*** (drolnick@mit.edu) and **Pablo Soberón**. *Algorithms for Tverberg's theorem via centerpoints.*

Tverberg's theorem describes when a point set may be partitioned into subsets such that the convex hulls intersect. We obtain algorithms for computing Tverberg partitions via approximated centerpoints. Our techniques apply to a wide range of convexity spaces, from the classic Euclidean setting to geodetic convexity in graphs (motivated by the partition conjecture). In the Euclidean setting, we present probabilistic algorithms that are weakly polynomial in the number of points and the dimension. For geodetic convexity in graphs, we obtain deterministic algorithms for cactus graphs and show that the general problem of finding the Radon number is NP-hard. (Received February 19, 2018)