

1079-05-195

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30308. *Symmetric Alcoved Polytopes.*

Generalized alcoved polytopes are polytopes whose facet normals are roots in a given root system. The type A alcoved polytopes are precisely the polytopes that are tropically convex. We say that a set of points in a type- t alcoved polytope is a generating set if the polytope is the smallest one containing the set. For type A , the tropical generators form a generating set. We show that for any root system other than F_4 , every alcoved polytope invariant under the natural Weyl group action has a generating set consisting of Coxeter number of elements. (Received January 12, 2012)