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Yamaguchi University, Japan. *Geometric representations of finite groups on real toric spaces.*

We develop a framework to construct geometric representations of finite groups G through the correspondence between real toric spaces $X^{\mathbb{R}}$ and simplicial complexes with characteristic matrices. We give a combinatorial description of the G -module structure of the homology of $X^{\mathbb{R}}$. As applications, we make explicit computations of the Weyl group representations on the homology of real toric varieties associated to the Weyl chambers of type A and B , which show an interesting connection to the topology of posets. We also realize a certain kind of Foulkes representation geometrically as the homology of real toric varieties. (Received September 26, 2017)