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Federico Ardila, Mariel Supina* (mariel_supina@berkeley.edu) and **Andrés Vindas-Meléndez**. *Equivariant Ehrhart theory of the permutahedron*. Preliminary report.

Ehrhart theory is a topic in geometric combinatorics which involves counting the number of lattice points inside of rational polytopes. Stapledon (2010) introduced equivariant Ehrhart theory, which is motivated by representation theory and is concerned with the integer points inside of polytopes fixed by some group action. In this talk, I will discuss recent work in answering one of Stapledon's open questions, namely, determining the equivariant Ehrhart theory for the permutahedron. Building off of previous work by Ardila, Schindler, and Vindas-Meléndez (2018), I will introduce the fixed polytopes of the permutahedron and present a combinatorial formula for their Ehrhart quasipolynomials. This is joint work with Federico Ardila (San Francisco State University) and Andrés Vindas-Meléndez (University of Kentucky). (Received August 13, 2019)