1059-05-86   **Mathias Drton**, **Caroline Klivans** and **Ed Swartz*** (`ebs22@cornell.edu`), Malott Hall,
Cornell University, Ithaca, NY 14850. *Projections volumes of real hyperplane arrangements.*

We consider projections of points in R^n onto chambers of real linear hyperplane arrangements. We show that the coefficients of the characteristic polynomial are proportional to the average spherical volumes of the sets of points that are projected onto faces of a given dimension. As a corollary we obtain that for real finite reflection arrangements the coefficients of the characteristic polynomial precisely give the spherical volumes of points projected onto faces of a fixed dimension of the fundamental chamber. An intermediate result computes the angle sums of zonotopes.

This talk reflects joint work with Mathias Drton and Caroline Klivans. (Received February 17, 2010)

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