

1165-13-211

Francesca Gandini*, 1200 Academy St, Kalamazoo, MI 49006. *Equivariant Hilbert Series of Subspace Arrangements.*

To an hyperplane arrangement we can associate a combinatorial object, a matroid. Similarly, to a subspace arrangement we associate a polymatroid. Each subspace in the arrangement can be viewed algebraically as a linear ideal. We can study the product of these linear ideals by using the combinatorial data of the polymatroid. In particular, by tensoring the ambient vector space with an n -dimensional vector space, we introduce an action of GL_n on the subspace arrangement and consequently on the product of linear ideals. The structure of the equivariant resolution of the product ideal is determined by the combinatorial data. More precisely, the equivariant Hilbert series of the product of the linear ideals can be recursively constructed from the polymatroid of the subspace arrangement. Furthermore, we will introduce a functor on the category of polynomial representations that produces an ideal in the exterior algebra associated to the product ideal of the subspace arrangement. The corresponding effect of this functor on the equivariant Hilbert series is the involution that maps the Schur symmetric function s_λ to $s_{\lambda'}$, the function indexed by the transpose of the original partition. (Received January 18, 2021)