1165-13-210 **Francesca Gandini***, 1200 Academy St, Kalamazoo, MI 49006. *Transfer of regularity bounds from the symmetric algebra to the exterior algebra.*

Given a collection of t subspaces in an n-dimensional vector space W we can associate to them t linear ideals in the symmetric algebra $\mathcal{S}(W^*)$. Conca and Herzog showed that the Castelnuovo-Mumford regularity of the product of t linear ideals is equal to t. Derksen and Sidman showed that the Castelnuovo-Mumford regularity of the intersection of t linear ideals is at most t. In this talk we show that analogous results hold when we work over the exterior algebra $\bigwedge(W^*)$ (and work over a field of characteristic 0). To prove these results we rely on the functoriality of equivariant free resolutions and construct a functor Ω from the category of polynomial functors to itself. The functor Ω transforms resolutions of polynomial functors associated to subspace arrangements over the symmetric algebra to resolutions over the exterior algebra. In particular, the functor Ω preserves regularity bounds. Therefore, in the exterior algebra, ideals constructed from t linear ideals will also have regularity at most t. (Received January 18, 2021)