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Francesca Gandini* (fragandi@umich.edu) and **Harm Derksen**. *Resolutions of ideals associated to subspace arrangements.*

Suppose that W_1, W_2, \dots, W_d are subspaces of an n -dimensional \mathbb{K} -vector space $W \cong \mathbb{K}^n$ and let $I_1, I_2, \dots, I_d \subseteq \mathbb{K}[x_1, x_2, \dots, x_n]$ be the vanishing ideals of W_1, W_2, \dots, W_d . Conca and Herzog showed that the Castelnuovo-Mumford regularity of the product ideal $I_1 I_2 \cdots I_d$ is equal to d . Derksen and Sidman showed that the Castelnuovo-Mumford regularity of the intersection ideal $I_1 \cap I_2 \cap \cdots \cap I_d$ is at most d and similar results hold for more general ideals constructed from linear ideals. In this paper we show that analogous results hold when we replace the polynomial ring with the exterior algebra and work over a field of characteristic 0. The proofs of aforementioned theorems rely on the existence of non-zero divisors, so this approach fails for the exterior algebra. Instead, we rely on the functoriality of free resolutions and construct a functor Ω from the category of polynomial functors to itself. The functor Ω transforms resolutions of ideals in the polynomial ring to resolutions of ideals in the exterior algebra. (Received August 24, 2018)