1032-14-6 **Alex Kasman*** (kasmana@cofc.edu), Department of Mathematics, College of Charleston, Charleston, SC 29424-0001. *Projections Between Affine Cones of Grassmann Varieties and the Universality of Rank 6 Plücker Relations.*

Grassmannians are a projective variety of fundamental importance. The variety $Gr(k,n)$ (the set of all k-dimensional subspaces of an n-dimensional space) is the zero set of the quadratic Plücker relations. The quadric rank of these relations (a measure of their complexity) increases with k, so that it is only in the case $k=2$ that the simplest Plücker relations (those having rank 6) are sufficient.

We report the surprising new result that there is a natural alternative to the Plücker relations that is *simpler* in that all of the relations can be taken to be of quadric rank six regardless of k and n. Perhaps the reason that this has not been noticed before is that it becomes more apparent in the *affine* setting. Our proof involves linear maps between the affine cones of the Grassmannians and provides the attractive interpretation that $Gr(k,n)$ is the common pullback of $Gr(2,4)$ under a collection of projections.

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