1124-05-88 **David C. Lax*** (dclax@vt.edu). *Order Filter Model for Minuscule Plücker Relations.*

The generalized Plücker relations are quadratic relations that define flag manifolds as projective varieties. We study the generalized Plücker relations for minuscule flag manifolds combinatorially and independent of Lie type. No geometric knowledge is necessary; the problem of finding these Plücker relations reduces to that of decomposing the symmetric square of a minuscule representation. We use Wildberger's combinatorial construction of minuscule Lie algebra representations that uses the colored partially ordered sets known as minuscule posets. We obtain, uniformly across Lie type, descriptions of the Plücker relations of "extreme weight". We show that these are supported by "double-tailed diamond" sublattices of minuscule lattices. From this, we obtain a complete set of Plücker relations for the exceptional minuscule flag manifolds. These extreme weight Plucker relations are straightening laws for their respective coordinate rings. (Received August 30, 2016)