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A combinatorial rule for (co)minuscule Schubert calculus

I will discuss a root system uniform, concise combinatorial rule for Schubert calculus in minuscule and cominuscule flag manifolds G/P. (The latter are also known as compact Hermitian symmetric spaces.) We connect this geometry to work of Proctor in poset combinatorics, thereby generalizing Schutzenberger's jeu de taquin formulation of the Littlewood–Richardson rule for computing intersection numbers of Grassmannian Schubert varieties. I will explain the rule, give some background, and, time permitting, give some idea of the proof, including the notion, which we introduce, of cominuscule recursion, which is a general technique which relating the structure constants for different Lie types.

This talk presents joint work with Alex Yong, and is based on the preprint (with the same title) math.AG/0608276.