Workshop on Interactions Between
Algebraic Combinatorics and Algebraic Geometry
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Schubert combinatorics and geometry

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Abstract

The topic of Schubert varieties of homogeneous spaces G/P is at the interface between algebraic geometry and combinatorics. I'll describe work on two themes.

The first is Schubert calculus: counting points in intersections of Schubert varieties. A goal has been combinatorial rules for these computations. I'll explain the "*carton rule*" which manifests basic symmetries of the numbers for the Grassmannian case; this version also has the advantage of generalizing to (co)minuscule G/P.

The second concerns singularities of Schubert varieties. I'll give a combinatorial framework for understanding invariant of singularities via a notion we call "*interval pattern avoidance*".

The **first half** of this talk is *joint work with Hugh Thomas* (U. New Brunswick) while the **second half** *is joint work with Alexander Woo* (UC Davis).