Pfaffian formulas for degeneracy loci

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Abstract:
Many interesting varieties arise as degeneracy loci: the set of points where a map of vector bundles drops rank, or equivalently, the set of points where two vector bundles intersect more than necessary. The problem of finding formulas for the degrees (or in more modern language, the cohomology classes) of these loci dates to the 19th century, but has experienced a surge of interest in the last few decades. The answer will be a universal polynomial in the Chern classes of the vector bundles involved, and it is closely related to the equivariant classes of Schubert varieties in G/B, where G is semisimple algebraic group. I'll describe recent progress in understanding these polynomials in classical types, including joint work with William Fulton.