The degrees of Stiefel manifolds

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Abstract

The Stiefel manifold is the set of orthonormal bases for k-planes in an n-dimensional space. We compute its degree as an algebraic variety in the space of k-by-n matrices using techniques from classical algebraic geometry, representation theory, and combinatorics. We give an interpretation of this degree in terms of non-intersecting lattice paths. This is joint work with Fulvio Gesmundo.