

Stanford Algebraic Geometry — Seminar —

COUNTING JUMPING CURVES OF VECTOR BUNDLES

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Abstract

Every vector bundle on \mathbb{P}^1 decomposes as a direct sum of line bundles. One can study a vector bundle E on \mathbb{P}^n by studying how this decomposition varies when one restricts E to lines. The varieties where the decomposition type changes, the varieties of jumping lines, exhibit a rich geometry.

In this talk I will describe how one can compute the invariants of varieties of jumping curves when one generalizes this construction to higher degree rational curves and vector bundles on other projective varieties. I will describe these invariants in some interesting cases like the Horrocks-Mumford bundle on \mathbb{P}^4 and the tautological bundles of Grassmannians. These computations resolve some classical enumerative geometry problems and have applications for the quantum cohomology of flag varieties.

Monday, May 23
noon
Room 383-N

<http://math.stanford.edu/~vakil/s0405/>