

Hajime Kaji (Waseda University)

Title: Degree formula for Grassmann bundles and its applications

Abstract:

The Grassmann bundle  $\mathbb{G}_X(d, \mathcal{E})$  of  $d$ -planes associated to a vector bundle  $\mathcal{E}$  on a scheme  $X$  is by definition a fibre bundle whose fibre at each point  $x \in X$  is isomorphic to the Grassmann variety  $\mathbb{G}(d, \mathcal{E} \otimes k(x))$  of  $d$ -planes in the vector space  $\mathcal{E} \otimes k(x)$ .

If  $X$  is projective over a field and  $\mathcal{E}$  is very ample, then  $\mathbb{G}_X(d, \mathcal{E})$  is naturally embedded into a projective space with relative Plücker embedding over  $X$ . In this talk I explain a degree formula for  $\mathbb{G}_X(d, \mathcal{E})$  (jointwork with T. Terasoma) and its applications.