

Meeting: 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-14-515 **Gian Mario Besana*** (gbesana@cti.depaul.edu), School Of CTI, DePaul University, 243 S Wabash, Chicago, IL 60611, and **Alberto Alzati** (alberto.alzati@mat.unimi.it), Dipartimento di Matematica, Via Saldini 50, 20133 Milano, MI, Italy. *Numerical criteria for very ampleness of vector bundles over rational ruled surfaces*. Preliminary report.

Very ampleness of a vector bundle E over a n -dimensional variety Y cannot in general be characterized numerically. On the other hand, when the Picard group of Y is particularly simple, one can hope to obtain sufficient numerical criteria. In this work, classical ideas are combined with a new strategy to obtain very ampleness criteria for vector bundles of rank 2 over rational ruled surfaces. As an application of the criteria, the existence of some projective smooth threefolds of degree 9, 10 and 11 is established. These manifolds, linear scrolls over the blow up of the projective plane at one point, appear as possible cases in the maximal lists obtained in the past by several authors, but their existence had not been previously established. (Received September 18, 2004)