Ohno, Masahiro

On nef values of determinants of ample vector bundles. (English) Zbl 0954.14006

RIMS Kokyuroku 1078, 75-85 (1999).

Let (M, L) be a polarised projective manifold of dimension n. Then the nef value $\tau(M, L)$ is defined as the infimum of t, such that $K_M + tL$ is nef. The author proves that under certain conditions on $\tau(M, \det E)$ for a rank r ample vector bundle on M, the manifold is very special. Here is a sample result:

$\tau(M, \det E) \leq (n+1)/r$ and equality holds if and only if $(M, E) \cong (\mathbb{P}^n, \mathcal{O}(1)^{\oplus r})$.

Similar results have been obtained in lesser generality by various authors [e.g. *Y.-G. Ye* and *Q. Zhang*, Duke Math. J. 60, No. 3, 671-687 (1990; Zbl 0709.14011) and *T. Peternell*, Math. Z. 205, No. 3, 487-490 (1990; Zbl 0726.14034)].

Reviewer: N.Mohan Kumar (St.Louis)

MSC:

14C20	Divisors, linear systems, invertible sheaves
14F05	Sheaves, derived categories of sheaves, etc. (MSC2010)
14M12	Determinantal varieties
14N05	Projective techniques in algebraic geometry
14J60	Vector bundles on surfaces and higher-dimensional varieties, and their moduli

Keywords:

ample vector bundles; nef value; polarised projective manifold; nef line bundle