

**Zhang, Qi**

**Ample vector bundles on singular varieties.** (English) Zbl 0842.14010  
*Math. Z.* 220, No. 1, 59-64 (1995).

Let  $X$  be an  $n$ -dimensional projective variety having at most log-terminal singularities and let  $E$  be an ample vector bundle of rank  $r$  on  $X$ . The author proves that:

- (1) If  $r = n + 1$  and  $c_1(X) = c_1(E)$  then  $(X, E) \simeq (\mathbb{P}^n, \mathcal{O}_P(1)^{n+1})$ ; and
- (2) If  $r \geq n + 1$  then  $K_X + c_1(E)$  is ample unless  $(X, E) \simeq (\mathbb{P}^n, \mathcal{O}_P(1)^{n+1})$ .

If  $X$  is smooth, the results were already known [cf. *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](#))]. However, the argument used in the smooth case do not work in the singular one.

Reviewer: [I.Coandă \(București\)](#)

**MSC:**

- [14F05](#) Sheaves, derived categories of sheaves, etc. (MSC2010)
- [14E15](#) Global theory and resolution of singularities (algebraic-geometric aspects)
- [14B05](#) Singularities in algebraic geometry

Cited in **1** Review  
Cited in **2** Documents

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**References:**

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