

Errata and Comments of On extremal rays of the higher dimensional varieties

Tetsuya Ando

•p.350 Line 20 — p.352 Line 7.

My calculations of $\chi(\mathcal{O}_X/J^r)$ and $\chi(\mathcal{O}_X/K^r)$ have some defects. These calculations must be corrected as the following:

To begin with, please obtain

[A] Tetsuya Ando, On the Normal bundle of an Exceptional curve in a higher dimensional algebraic manifold, Math. Ann., Vol.306(1995), pp.625-645.

Correct calculations of $\chi(\mathcal{O}_X/J^r)$ and $\chi(\mathcal{O}_X/K^r)$ are given in Theorem 2.6 in [A]. As a result, we obtain $p_1 + 2(p_2 + \cdots + p_{n-1}) \geq 0$ and $(p_1 + p_2) + 2(p_3 + \cdots + p_{n-1}) \geq 0$. Thus, we obtain $(p_1, \dots, p_{n-1}) = (-1, 0, \dots, 0, 2)$ or $(-1, 0, \dots, 0, 1, 1)$.

In the proof of Case II.2., my calculation of $\chi(\mathcal{O}_X/L^r)$ also has some defects. This part must be replaced by Theorem 4.1 in [A].

•p.356, Theorem 3.1.

In the proof of (ii), we need to prove that $f: X \rightarrow Y$ is flat. This part is proved in the following article:

[R] Eleonora Anna Romano, A Note on Flatness of Some Fiber Type Contraction, arXiv:1906.10911.