TRANSACTIONS OF THE
AMERICAN MATHEMATICAL SOCIETY
Volume 291, Number 1, September 1985

CORRECTION TO "VANISHING THEOREMS AND KÄHLERITY FOR STRONGLY PSEUDOCONVEX MANIFOLDS"

BY
VO VAN TAN

It has been brought to my attention by N. Coltoiu that there was a gap in the proof of Theorem II in [3]. By using the same notations as in [3], the proof of our Theorem II can be corrected as follows.

THEOREM II. *Let* (X, S) *be a strongly pseudoconvex manifold. If* $\dim S = 1$, *then* X *is Kählerian. In particular, any strongly pseudoconvex surface is Kählerian.*

First of all the following result is needed.

LEMMA [1]. *Let* S *be a compact* $\mathbf{C}$ *analytic space and let* L *be a holomorphic line bundle on* S. *Let us assume that, for every positive dimensional subspace* T *of* S, *there exist an integer* n *and a nonzero holomorphic section of* $L^n \otimes O_T$ *which vanishes at some point of* T. *Then* L *is positive.*

Notations. From now on, a *positive* line bundle (resp. *semipositive* line bundle) will be denoted by $L > 0$ (resp. $L \geqslant 0$).

PROOF OF THEOREM II. Without loss of generality, one can assume that S is irreducible. So let x be a point on S and let $\pi\colon \hat{X} \to X$ be the blowing up of X at x inducing a biholomorphism $\hat{X} \setminus D \simeq X \setminus \{x\}$.

Let T be the strict transform of S under π; it is clear the $\hat{X}$ is a strongly pseudoconvex manifold with its exceptional set $\hat{S} = D \cup T$.

CLAIM. There exists a positive line bundle L on $\hat{X} \setminus D$.

In fact, let $L_1 := [D]$ be the line bundle determined by D. Since $\dim T = 1$, the Lemma above tells us that $L_1 | T > 0$. In view of the compactness of T, one can find a relative compact neighborhood V of T in $\hat{X}$ such that

(*) $L_1 > 0$ on V and by construction $L_1 \geqslant 0$ on $\hat{X} \setminus D$.

Since $\hat{X}$ is strongly pseudoconvex, one can find a line bundle L_2 on $\hat{X}$ such that

(**) $L_2 > 0$ on $\hat{X} \setminus \hat{S}$ and $L_2 \geqslant 0$ on $\hat{X}$.

In view of (*) and (**), it follows that, for some $N \gg 0$, the line bundle $L := L_1 \otimes L_2^N > 0$ on $(\hat{X} \setminus \hat{S}) \cup V \supset \hat{X} \setminus D$. Hence our claim is proved.

Consequently, $\hat{X} \setminus D \simeq X \setminus \{x\}$ is Kählerian. The result in [2] tells us that X itself is Kählerian. Q.E.D.

REFERENCES

1. H. Grauert, *Über Modifikationen und exzeptionelle analytische Mengen*, Math. Ann. **146** (1962), 331–368.

2. Y. Miyaoka, *Extension theorems for Kähler metrics*, Proc. Japan Acad. **50** (1974), 407–410.

3. Vo Van Tan, *Vanishing theorems and Kählerity for strongly pseudoconvex manifolds*, Trans. Amer. Math. Soc. **261** (1980), 297–302.

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE, SUFFOLK UNIVERSITY, BEACON HILL, BOSTON, MASSACHUSETTS 02114