ON THE AUTOMORPHISM GROUP OF A CERTAIN CLASS OF ALGEBRAIC MANIFOLDS

SHOSHICHI KOBAYASHI*)

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1. Introduction. The main purpose of the present paper is to prove the following

THEOREM. *Let M be a compact complex manifold whose first Chern class $c_1(M)$ is negative definite. Then the group G of all holomorphic transformations of M is finite.*

For the case dim $M = 1$ (i. e., a compact Riemann surface of genus>1), this theorem has been known for a long time. In fact,

(A) H. A. Schwarz proved that G is discrete. [16].

(B) In 1882, F. Klein proved, in his letter to H. Poincaré, that G is finite. (cf. pp. 15-17 of [14]).

(C) A. Hurwitz proved that the order of G is not greater than $84(p-1)$, where p is the genus of M. [9].

For the case dim $M = 2$, we have the following theorem of A. Andreotti.[1)]

(D) If M is a non-singular irrational algebraic surface of linear genus>1, then G is finite. [2].

Observe that the assumption $c_1(M) < 0$ is stronger than that of (D).

For the case of an arbitrary dimension, a special case of our theorem has been proved by Bochner [5], Hawley [8] and Sampson [15]. Namely,

(E) If M is a compact complex manifold whose universal covering space is a bounded domain in C^n, then G is finite.

In 1946, Bochner proved that

(F) If M is a compact Kaehler manifold whose Ricci tensor is negative definite, then G is discrete. [4].

Making use of a result of Akizuki-Nakano [1], Nakano generalized the result of Bochner as follows. (cf. p. 386 [12]).

(G) If M is a compact complex manifold with $c_1(M) < 0$, then G is dis-

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1) For algebraic surfaces, Andreotti gave estimates on the order of G and on the periods of elements of G. Cf. Sopra le superficie algebriche che posseggono transformazioni birazionali in sè, Univ. Roma Inst. Naz. Alta Mat. Rend. Mat. e Appl. 9(1950)255-279.