Tôhoku Math. Journ.
24 (1972), 51-54.

POSITIVELY CURVED COMPLEX HYPERSURFACES IMMERSED IN A COMPLEX PROJECTIVE SPACE

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(Received Aug. 16, 1971)

1. **Introduction.** Let $P_m(C)$ be a complex projective space of complex dimension m with the Fubini-Study metric of constant holomorphic sectional curvature 1. Recently, using topological methods in algebraic geometry, we have proved the following result.

PROPOSITION A ([2]). *Let M be a complete complex hypersurface imbedded in $P_{n+1}(C)$. If $n \geqq 2$ and if every sectional curvature of M with respect to the induced metric is positive, then M is complex analytically isometric to a hyperplane $P_n(C)$.*

S. Tanno has tried to generalize this result to *immersed* hypersurfaces and obtained the following.

PROPOSITION B ([4]). *Let M be a complete complex hypersurface immersed in $P_{n+1}(C)$. If $n \geqq 2$ and if every sectional curvature of M with respect to the induced metric is greater than $(1/4)\{1-(n+2)/(3n)\}$, then M is complex analytically isometric to a hyperplane $P_n(C)$.*

The purpose of this paper is to prove the following theorem which is a generalization of Proposition A and is also an improvement of proposition B in the case $n \geqq 4$.

THEOREM. *Let M be a complete complex hypersurface immersed in $P_{n+1}(C)$. If $n \geqq 4$ and if every sectional curvature of M with respect to the induced metric is positive, then M is complex analytically isometric to a hyperplane $P_n(C)$.*

2. **Proof of Theorem.** First we note that since every sectional curvature of M is positive, M is compact (cf., Proposition 3.1 in [2]).

Let J(resp. $\tilde{J}$) be the complex structure of M(resp. $P_{n+1}(C)$) and g (resp. $\tilde{g}$) be the Kaehler metric of M(resp. $P_{n+1}(C)$). We denote by ∇ (resp. $\tilde{\nabla}$) the covariant differentiation with respect to g (resp. $\tilde{g}$). Then the second fundamantal form σ of the immersion is given by

Work done under partial support by the Sakko-kai Foundation.