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ON THE HOLONOMY GROUP OF A NORMAL COMPLEX ALMOST CONTACT MANIFOLD

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In a recent paper [4] Ishihara and Konishi have studied fiberings (with 1-dimensional fibre) of manifolds with an (real) almost contact 3-structure and obtained in the base space of a new kind of structure, called a (normal) complex almost contact structure. This structure is a complex contact structure. In the present paper, we use the curvature properties developed in their paper to prove the following.

THEOREM. *The holonomy group of a normal complex almost contact manifold of complex dimension* $2m+1$, $m>0$, *is the unitary group* $U(2m+1)$.

1. Preliminary. Definitions and proofs of statements in this section may be found in [1] through [4]. Let (M, g, F) be a Kählerian manifold with Riemannian metric g and complex structure F. $A=\{O, O', \cdots\}$ be an open covering of M consisting of coordinate neighborhoods. Suppose that there are in each $O\in A$ two covariant vector fields u, v and two tensor fields G, H of type one-one satisfying

$$
(1.1)\qquad \begin{cases} u(X)=g(U, X), \quad v(X)=g(V, X) \qquad \forall X; \\ G^2=H^2=-I+u\otimes U+v\otimes V, \quad HG=-GH=F+u\otimes V-v\otimes U; \\ GF=-FG=H, \quad HF=-FH=-G; \\ GU=GV=HU=HV=0, \quad u\circ G=v\circ G=u\circ H=v\circ H=0; \\ FU=-V, \quad FV=U; \\ \|U\|=\|V\|=1, \quad g(U, V)=0; \\ g(GX, Y)=-g(GY, X), \quad g(HX, Y)=-g(HY, X), \qquad \forall X, Y \end{cases}
$$

and for the corresponding tensor fields u', v', G' and H' defined in O' by (1.1) the relations

$$
(1.2)\qquad \begin{cases} u'=au-bv, \quad v'=bu+av \\ G'=aG-bH, \quad H'=bG+aH \end{cases}
$$

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