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ON SIX DIMENSIONAL ALMOST HERMITIAN MANIFOLDS WITH POINTWISE CONSTANT HOLOMORPHIC SECTIONAL CURVATURE

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Dedicated to Professor U-Hang Ki on his 60th birthday

1. INTRODUCTION

Let $M = (M, J, g)$ be a 6-dimensional almost Hermitian manifold. We denote by ∇, R, ρ and τ the Riemannian connection, the curvature tensor, the Ricci tensor and the scalar curvature of M, respectively. We assume that the curvature tensor R is given by

$$R(X,Y)Z = [\nabla_X, \nabla_Y]Z - \nabla_{[X,Y]}Z,$$

$$R(X,Y,Z,W) = g(R(X,Y)Z,W)$$

for X, Y, Z, $W \in \mathfrak{X}(M)$. The holomorphic sectional curvature is defined by

$$H(X) = -R(X,JX,X,JX)$$

for $X \in T_pM (p \in M)$ with $g(X,X) = 1$. If $H(X)$ is constant $\mu(p)$ for all $X \in T_pM(p \in M)$ at each point p of M, M is said to be of pointwise constant holomorphic sectional curvature. Further, if μ is constant whole on M, then M is said to be of constant holomorphic sectional curvature. It is well known that if a 6-dimensional nearly Kaehler manifold M is of constant holomorphic sectional curvature μ, then

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