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RICCI-PSEUDO-SYMMETRIC REAL HYPERSURFACES IN COMPLEX SPACE FORMS

IN-BAE KIM, HYE JEONG PARK AND HYUNJUNG SONG

ABSTRACT. We characterize a Ricci-pseudo-symmetric real hypersurface M with associated function f in a complex space form $M_n(c)$, $c \neq 0$, $n \geq 3$. We show that f is a constant on M, and M is locally congruent to a real hypersurface of type A_2 if $c > 0$, and that of type A_0 if $c < 0$.

1. Introduction

The nonexistence of semi-parallel and semi-symmetric real hypersurfaces in a complex space form $M_n(c)$ has been established for $n \geq 3$ (see [1], [2], [3], [4] and [6]). Thus it is natural to find a weaker condition than the semi-parallelism or semi-symmetric one that allows to be classified the real hypersurfaces. Recently, G. A. Lobos and M. Ortega ([3]) studied the existence of pseudo-parallel real hypersurfaces in $M_n(c)$, $c \neq 0$.

Let M be real hypersurface in a complex space form, and let R and S be the curvature tensor and the Ricci operator of M. Given tangent vector fields X and Y on M, let $X \wedge Y$ denote the operator of the tangent bundle of M given by $Z \mapsto < Y, Z > X - < X, Z > Y$, where $<, >$ is the inner product. It can be extended to act as a derivation on S as follows:

$$(X \wedge Y \cdot S)Z = (X \wedge Y)SZ - S(X \wedge Y)Z.$$

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