South East Asian J. of Math. & Math. Sci. **ISSN : 0972-7752**
Vol.11, No.2 2015, pp. 21-26

On Analytic Submanifolds of Different Kahlerian Spaces

Rajeev Kumar Singh
Department of Mathematics,
P.B.P.G. College, Pratapgarh, (U.P.) India
E-mail:- dr.rajeevthakur2012@gmail.com

Abstract: The present paper deals with one of two types of submanifolds, namely analytic of certain Kahlerian spaces. Article 1 has been devoted to fundamental results of Kahlerian space whereas in the article 2, we have noted down the results holding good for analytic submanifolds. The articles 3 and 4 deal with totally geodesic analytic submanifolds of symmetric and recurrent Kahlerian spaces respectively and the paper has been concluded by two meaningful remarks.
Keywords and Phrases: Kahlerian spaces, covariant curvature tensor, Ricci tensor, HP curvature tensor, H-conharmonic curvature tensor.
AMS Subject classification: 53B20, 53C55

1. Preliminaries

Let X_{2n} be a 2n-dimension Kalherian space with F_i^h as structure tensor, g_{ji} as Hermitian metric tensor and ∇ be the operator of covariant differentiation with respect to the christoffel symbols formed with g_{ji}, then

$$(a) \quad F_i^h F_h^j = -\delta_i^j \qquad (b) \quad g_{rs} F_j^r F_i^s = g_{ji} \quad \text{and} \quad (c) \quad \nabla_k F_i^j = 0 \tag{1.1}$$

Here, and in the sequel, the indices i,j,k,... run over the range 1,2,3,...,2n. With the help of Riemannian curvature tensor R_{kji}^h, the covariant curvature tensor $R_{kjih} = g_{jh} R_{kji}^m$, Ricci tensor $R_{ji} = R_{lji}^l = g^{lm} R_{ljim} = g^{lm} R_{jmli}$ and the tensor $S_{ji} = F_j^r R_{ri}, F_{ji} = F_j^h g_{ij}$ etc., we have the expressions

$$P_{kjih} = R_{kjih} + \frac{1}{n+2}[g_{jh}R_{ki} - g_{kh}R_{ji} + F_{ji}S_{kh} - F_{kh}S_{ji} + 2F_{ih}S_{kj}] \tag{1.2}$$

$$\begin{aligned} B_{kjih} = R_{kjih} + \frac{1}{n+4}\{g_{jh}R_{ki} - g_{kh}R_{ji} + g_{ki}R_{jh} - g_{ji}R_{kh} \\ + F_{jh}S_{k1} - F_{kh}S_{ji} + F_{k1}S_{jh} - F_{ji}S_{kh} + 2S_{kj}F_{ih} + 2F_{kj}S_{ih}\} \\ - \frac{R}{(n+2)(n+4)}\{g_{jh}g_{k1} - g_{kh}g_{ji} - F_{jh}F_{ki} - F_{kh}F_{ji} + 2F_{kj}F_{ih}\} \end{aligned} \tag{1.3}$$