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GENERALIZED CONFORMAL CURVATURE TENSOR OF LP-SASAKIAN MANIFOLD

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Abstract: The object of the present paper is to generalize conformal curvature tensor of LP-Sasakian manifold with the help of a new generalized $(0, 2)$ symmetric tensor $\mathcal{Z}$ introduced by Mantica and Suh [7]. Various geometric properties of the generalized conformal curvature tensor of LP-Sasakian manifold have been studied. It is shown that a generalized conformally ϕ-Symmetric LP-Sasakian manifold is an η-Einstein manifold.

Keywords and Phrases: LP-Sasakian manifold, conformal curvature tensor, generalized conformal curvature tensor, Einstein manifold.

2020 Mathematics Subject Classification: 53C25, 53D15.

1. Introduction

In 1960, a Japanese Mathematician S. Sasaki introduced the notion of Sasakian structure [13]. A contact metric manifold is said to be Sasakian if it is normal. In some respects, Sasakian manifolds may be viewed as an odd dimensional analogous of Kâhler manifolds. T. Adati and K. Matsumoto [1] defined para-Sasakian and special para-Sasakian manifolds which are considered as special cases of an almost paracontact manifold introduced by I. Sato and K. Matsumoto [14].

The notation of Lorentizian para-Sasakian manifold was introduced by K. Matsumoto [9] in the year 1989.Later in 1992, the same notation was defined by Mihai