

QUARTER-SYMMETRIC METRIC CONNECTION ON ALMOST KENMOTSU MANIFOLD WITH NULLITY DISTRIBUTION

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(Received: Oct. 12, 2020 Accepted: Jan. 20, 2021 Published: Apr. 30, 2021)

Abstract: The aim of the present paper is to characterized $(k, \mu)'$ almost Kenmotsu manifold admitting quarter-symmetric metric connection. Next we consider an almost Kenmotsu manifold with $h' \neq 0$ and ξ belonging to $(k, \mu)'$ -nullity distribution satisfying certain curvature conditions with respect to quarter-symmetric metric connection.

Keywords and Phrases: Almost Kenmotsu manifold, quarter-symmetric metric connection, curvature tensor, CR-integrable, nullity distribution.

2020 Mathematics Subject Classification: 53C05, 53D10, 53D15.

1. Introduction

In 1969, S. Tanno [23] introduced the notion of almost contact metric manifolds whose automorphism groups attain the maximum dimensions and conclude that such manifolds can be classified into three classes. After that K. Kenmotsu in 1972, introduced a new type of almost contact metric manifolds which characterized the third case of Tanno's classification theorem and such manifolds were firstly named as Kenmotsu manifolds by Janssens and Vanhecke [15]. In 1981, Janssens and Vanhecke in [15] first introduced the notion of almost Kenmotsu manifolds which is a generalization of Kenmotsu manifolds. Almost Kenmotsu manifolds were recently studied by many authors as Dileo and Pastore [9, 10], Wang and Liu [24, 25, 26, 27], Ghosh [13], Deshmukh, De and Zhao [8].