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ON THE BIANCHI IDENTITIES IN A GENERALIZED WEYL SPACE*

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Abstract. In this paper, we show that the first Bianchi identity is valid for a generalized Weyl space having a semi-symmetric E-connection and that the second Bianchi identity is satisfied for a recurrent generalized Weyl space provided that the recurrence vector ψ_l and the Vranceanu vector Ω_l are related by $\psi_l = \frac{2}{n-1}\Omega_l$.

1. Introduction

An n-dimensional differentiable manifold W_n^* having an asymmetric connection ∇^* and asymmetric conformal metric tensor g^* preserved by ∇^* is called a **generalized Weyl space** [1]. For a such a space, in local coordinates, we have the compatibility condition

$$\nabla_k^* g_{ij}^* - 2T_k^* g_{ij}^* = 0, (1.1)$$

where T_k^* are the components of a covariant vector field called the complementary vector field of the generalized Weyl space.

The coefficients L^i_{jk} of the connection ∇^* are obtained from the compatibility condition as [2]

$$L_{jk}^{i} = \Gamma_{jk}^{i} + \frac{1}{2} \left[\Omega_{kl}^{h} g_{(jh)}^{*} + \Omega_{jl}^{h} g_{(hk)}^{*} + \Omega_{jk}^{h} g_{(hl)}^{*} \right] g^{*(li)}$$
 (1.2)

or, putting

$$Q_{jk}^{i} = \frac{1}{2} \left[\Omega_{kl}^{h} g_{(jh)}^{*} + \Omega_{jl}^{h} g_{(hk)}^{*} + \Omega_{jk}^{h} g_{(hl)}^{*} \right] g^{*(li)}$$
(1.3)

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