

A recurrent (CHR) -curvature tensor field in a trans-Sasakian manifold

Koji Matsumoto

(Yamagata University, 2-3-65 Nishi-Odori, Yonezawa, Yamagata, 992-0059, Japan)

E-mail: tokiko_matsumoto@yahoo.com

A tensor field T in a Riemannian manifold is called *recurrent* if it satisfies $\nabla_X T = A(X)T$ for a certain 1-form A which is called *recurrent 1-form*, where ∇ means the covariant differentiation with respect to the Riemannian metric.

Recently, we introduced the notion of (CHR) -curvature tensor field in an almost contact Riemannian manifold.

In this talk, we consider the (CHR) -curvature tensor field is recurrent in a trans-Sasakian manifold M , that is, $(\nabla_U(CHR))(X, Y, Z, W) = A(U)(CHR)(X, Y, Z, W)$ for any tangent vector fields U, X, Y, Z, W on M . Then, we show that the Riemannian curvature tensor (resp. (CHR) -curvature tensor) is written by A, α and β .