ON WEAKLY SYMMETRIC STRUCTURES ON A RIEMANNIAN
MANIFOLD

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Abstract

The study of weakly symmetric and weakly projective symmetric manifold were initiated by Tamassy and Binh in 1989.
Later on several authors studied weakly symmetric Riemannian manifold and analogous structures, viz. Weakly Ricci symmetric, weakly projective symmetric and weakly conformally symmetric Riemannian manifolds. At first we cited examples of weakly symmetric Riemannian manifolds. Next we present a brief survey of results on weakly symmetric structures on a Riemannian manifold and some applications in the theory of relativity.
Among others it is proved that a conformally flat weakly Ricci symmetric manifold is the Robertson-walker space-time.