

Generalized Ricci–Bourguignon solitons on Lorentzian para-Sasakian manifolds and their applications in spacetimes

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Abstract. The principal aim of the present article is to characterize certain properties of Lorentzian para-Sasakian manifolds with generalized Ricci–Bourguignon solitons. We find a sufficient condition for a Lorentzian para-Sasakian manifold admitting generalized Ricci–Bourguignon solitons to be an η -Einstein manifold. We also construct a non-trivial example to verify the deduced results. Moreover, we analyze generalized Ricci–Bourguignon solitons in the perspective of 4-dimensional Lorentzian para-Sasakian spacetimes.

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