

## Weakly-Einstein three-dimensional Lorentzian manifolds

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**Abstract.** Berger's curvature identity is studied on Lorentzian algebraic curvature models of dimension three, and homogeneous weakly-Einstein spaces are classified. We show that spaces with two-step nilpotent Ricci operators are the only non-Einstein spaces which satisfy all weakly-Einstein conditions simultaneously. Non-homogeneous examples are constructed using Walker structures.

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