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ON EINSTEIN EXTENSIONS OF NILPOTENT METRIC LIE ALGEBRAS

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The main result of the article is as follows: If a nilpotent noncommutative metric Lie algebra $(\mathfrak{n}, Q)$ is such that the operator $\mathrm{Id} - \frac{\mathrm{trace(Ric)}}{\mathrm{trace(Ric^2)}}\mathrm{Ric}$ is positive definite then every Einstein solvable extension of $(\mathfrak{n}, Q)$ is standard. We deduce several consequences of this assertion. In particular, we prove that all Einstein solvmanifolds of dimension at most 7 are standard.

Key words and phrases: Einstein metrics, Riemannian manifolds, nilpotent metric Lie algebras, solvmanifolds.

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