Einstein Pseudo-Riemannian metrics on Solvable Lie Groups

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The classification of nice nilpotent Lie algebras and their connection to Einstein pseudo-Riemannian metrics will be the focus of this talk. In the first part, we will show that nice nilpotent Lie algebras are different in a suitable category, and we will present an algorithm to obtain such algebras. In the second part, we will study the relations between nilsolitons and construction of Einsten solvmanifolds for pseudo-Riemannian metrics. This suggests that the interplay between indefinite Einstein solvmanifolds and the geometry of nilmanifolds is more complicated compared to the Riemannian case. This talk will also present some examples of special Einstein pseudo-Riemannian metrics and a constructive method to build them, as well as touch upon some open problems. This is a joint work with Diego Conti.

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