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Ricci Yang–Mills solitons on nilpotent Lie groups

There has been much recent progress in the study of Ricci solitons on nilpotent and solvable Lie groups. In this talk, I will define the Ricci Yang–Mills flow, which is related to the Ricci flow. I will also define Ricci Yang–Mills solitons, which are generalized fixed points of the Ricci Yang–Mills flow. These metrics are related to Ricci solitons; however, they are defined on principal G -bundles and are designed to detect more of the bundle structure. On nilpotent Lie groups, one can say precisely in what sense Ricci Yang–Mills solitons are related to Ricci solitons. I will provide examples of 2-step nilpotent Lie groups that admit Ricci Yang–Mills solitons but that do not admit Ricci solitons. This is joint work with Mike Jablonski.