



Bach-flat gradient steady Ricci solitons

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In this paper we prove that any n -dimensional ($n \geq 4$) complete Bach-flat gradient steady Ricci soliton with positive Ricci curvature is isometric to the Bryant soliton. We also show that a three-dimensional gradient steady Ricci soliton with divergence-free Bach tensor is either flat or isometric to the Bryant soliton. In particular, these results improve the corresponding classification theorems for complete locally conformally flat gradient steady Ricci solitons in [6] and [9].

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