

Title: Ricci solitons and gradient Ricci solitons on 3-dimensional normal almost contact metric manifolds

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The object of the present paper is to study a 3-dimensional normal almost contact metric manifold admitting Ricci solitons and gradient Ricci solitons. At first we give an example of a 3-dimensional normal almost contact metric manifold with $\alpha, \beta = \text{constant}$. We prove that a 3-dimensional normal almost contact metric manifold admitting a Ricci soliton with a potential vector field V collinear with the characteristic vector field ξ , is η -Einstein provided $\alpha, \beta = \text{constant}$. Also we show that an η -Einstein 3-dimensional normal almost contact metric manifold with $\alpha, \beta = \text{constant}$ and $V = \xi$ admits a Ricci soliton. Finally we prove that if in a 3-dimensional normal almost contact metric manifold with constant scalar curvature, g is a gradient Ricci soliton, then the manifold is either α -Kenmotsu or an Einstein manifold provided $\alpha, \beta = \text{constant}$.

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