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 \( \xi \), is \( \eta \)-Einstein provided \( \alpha, \beta = \text{constant} \). Also we show that an \( \eta \)-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 \( \alpha \)-Kenmotsu or an Einstein manifold provided \( \alpha, \beta = \text{constant} \).

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