Gradient Ricci solitons

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Abstract

A Riemannian metric g is said to be a gradient Ricci soliton if there exists a function f such that its Hessian (considered as a quadratic form) is equal to the Ricci tensor of g. (The function f is called the 'Ricci potential'.) In this talk, I will discuss some recent results about the local structure of these metrics and their global structure in the case in which the Ricci curvature is positive and the metric is complete (which is the most interesting case for applications to the study of Ricci flow on manifolds).