On the structure of gradient Ricci solitons with constant scalar curvature

Eduardo García-Río

University of Santiago de Compostela, Faculty of Mathematics, Santiago de Compostela, SPAIN
[eduardo.garcia.rio@usc.es]

The purpose of this talk is to review some recent results on the geometry of gradient Ricci solitons with constant scalar curvature. Rigid Ricci solitons have constant scalar curvature, but no other non-trivial examples are known. Conditions on the number of different Ricci curvatures as well as on the rank of the Ricci operator suffice to show that the constancy of the scalar curvature leads to rigidity. Finally, a structure result shows that any gradient Ricci soliton with constant scalar curvature is a vector bundle over a totally geodesic submanifold.