1108-53-112 **Bang-Yen Chen***, Department of Mathematics, Michigan State University, East Lansing, MI 48864. *Ricci solitons on Riemannian submanifolds.* Preliminary report.

A smooth vector field ξ on a Riemannian manifold (M, g) is said to define a *Ricci soliton* if it satisfies

$$\frac{1}{2}\pounds_\xi g + Ric = \lambda g,$$

where $\pounds_\xi g$ is the Lie-derivative of the metric tensor g with respect to ξ, Ric is the Ricci tensor of (M, g) and λ is a constant. During the last two decades, the geometry of Ricci solitons has been the focus of attention of many mathematicians. It has become more important after G. Perelman applied Ricci solitons to solve the long standing Poincaré conjecture posed in 1904.

In this article we survey important results on Ricci solitons which occur naturally on certain Riemannian submanifolds. (Received January 05, 2015)