

Comparison Geometry in Summer 2017

Exercise sheet 8

Exercise 1.

Prove Cheng's Maximal Diameter Theorem:

Theorem (S.Y. Cheng, 1975). If M is a complete Riemannian n -manifold with $\text{Ric} \geq (n-1)k > 0$ and $\text{diam}(M) = \pi/\sqrt{k}$, then M is isometric to the n -sphere with constant curvature k .

Due: Wednesday June 28, 2017, before the exercise class.