

WORKSHOP ON SUBMANIFOLD THEORY AND GEOMETRIC ANALYSIS

UFSCAR, SÃO CARLOS, BRAZIL, AUGUST 05 – 09, 2019

WEDNESDAY- 15h - 15:30h -AUDITÓRIO DO DM

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Volume comparison and Gap Results on the n -dimensional sphere

ABSTRACT. A result showed by M. Gursky ensures that any metric g on the 4-dimensional sphere \mathbb{S}^4 satisfying $Ric_g = 3g$ and $inj_g(\mathbb{S}^4) \geq \frac{\pi}{\sqrt[4]{3}}$ is isometric to the round metric. In this talk, we will discuss on that there exists a universal number i_0 such that any metric g on the 4-dimensional sphere \mathbb{S}^4 satisfying $Ric_g = 3g$ and $inj_g(\mathbb{S}^4) \geq \frac{\pi}{\sqrt[4]{3}} - i_0$ is isometric to the round metric. Furthermore, there exists a universal $\varepsilon_0 > 0$ such that any metric g on the 4-dimensional sphere \mathbb{S}^4 with nonnegative sectional curvature, $Ric_g = 3g$ and $\frac{8}{9}\pi^2 - \varepsilon_0 \leq Vol(\mathbb{S}^4, g)$ is isometric to the round metric. We will also use this volume comparison theorem, in addition to Bishop's volume comparison theorem, to address rigidity results on static metrics.

Support:



Organizers:

