Student Differential Geometry Seminar

Stony Brook University

November 5, 2018

Marlon Gomes : "Joyce's construction of compact G_2-manifolds: part I."

ABSTRACT: In the first part of the talk, I will prove that a Riemannian metric arising from a torsion-free G_2-structure on a compact manifold has reduced holonomy G_2 if and only if the fundamental group of the manifold is finite.

In the second part, we will begin the study of Joyce's generalized Kummer construction of compact manifolds with holonomy G_2. I will describe the local structure near the singular points of quotients of the flat G_2 structure on the 7-torus, as well as the geometry of their resultions.