Student Differential Geometry Seminar

Stony Brook University

November 12, 2018

Jean-François Arbour : "Joyce's construction of compact G_2-manifolds: part II"

ABSTRACT: This talk will be about D. Joyce's first paper on constructing examples of compact 7-manifolds with G_2-holonomy. The argument is based on a gluing technique similar to the Kümmer construction of Ricci-flat metrics on $K3$ surfaces. Indeed, Joyce considers certain smoothings of flat orbifolds and equips them with G_2-structures having small torsion. Using analytical arguments, he then produces the examples by showing that these G_2-structures can be perturbed to torsion-free G_2-structures.