

Deformation theory of nearly G_2 -manifolds

Shubham Dwivedi - University of Waterloo, (Canada)

Abstract: We will discuss the deformation theory of nearly G_2 manifolds. After defining nearly G_2 manifolds, we will describe some identities for 2 and 3 forms on such manifolds. We will introduce a Dirac type operator which will be used to prove new results on the cohomology of nearly G_2 manifolds. Along the way we will reprove a result of Alexandrov—Semmelman on the space of infinitesimal deformation of nearly G_2 structures. Finally we will discuss whether the infinitesimal deformations of nearly G_2 structure on the Aloff-Wallach space are obstructed/unobstructed to second order. The talk is based on a joint work in progress with Ragini Singhal (University of Waterloo).