
SHUBHAM DWIVEDI, Humboldt University, Berlin

Deformation theory of nearly G_2 manifolds

We will discuss the deformation theory of nearly G_2 manifolds. These are seven dimensional manifolds admitting real Killing spinors. After briefly discussing the preliminaries, we will show that the infinitesimal deformations of nearly G_2 structures are obstructed in general. Explicitly, we will show that the infinitesimal deformations of the homogeneous nearly G_2 structure on the Aloff–Wallach space are all obstructed to second order. We will also completely describe the cohomology of nearly G_2 manifolds. This talk is based on a joint work with Ragini Singhal (University of Waterloo) (<https://arxiv.org/abs/2007.02497>).