

---

**SPIRO KARIGIANNIS**, Mathematical Institute, University of Oxford

*Conical singularities in  $G_2$  manifolds*

I will survey some recent work on compact  $G_2$  manifolds with isolated conical singularities. Specifically I will discuss glueing methods for their desingularization, which involves topological obstructions, as well as the deformation theory (moduli spaces) of such manifolds.

I will also briefly discuss a new construction with Dominic Joyce which could provide the first examples of such manifolds, as well as a possible new construction of smooth compact  $G_2$  manifolds.