

Speaker: Simon Donaldson

Title: Collapsing co-associative fibrations on G_2 -manifolds.

Abstract: Seven dimensional manifolds with torsion-free G_2 -structures share many features with Calabi-Yau manifolds, especially Calabi-Yau threefolds. This talk will give an overview, with few details, of a programme to study G_2 -manifolds fibred over a 3-dimensional base with generic fibres diffeomorphic to the K3 4-manifold, and of very small volume. We will discuss (conjectural) descriptions of calibrated submanifolds in this regime and analogies and similarities with developments in Calabi-Yau theory presented in other lectures in this workshop.