Atelier : « LES ESPACES DE MODULES ET LEURS INVARIANTS EN PHYSIQUE MATHÉMATIQUE »
3–14 JUIN, 2013

***Workshop*: "MODULI SPACES AND THEIR INVARIANTS IN MATHEMATICAL PHYSICS"**
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Moduli spaces of G_2 manifolds and G_2 conifolds

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I will discuss the current state of knowledge about moduli spaces of G_2 manifolds and G_2 conifolds, and their interactions. The moduli space of (compact) G_2 manifolds has been studied by Joyce, Hitchin, and others. It is smooth and finite-dimensional. It admits the structure of an affine Hessian manifold, and has additional special features. The moduli space of G_2 conifolds is often obstructed, but its properties are related to possible boundary behaviour / compactification of the moduli space of G_2 manifolds. I will discuss some aspects of two separate works :

[1] deformation theory of G_2 conifolds [*with Jason Lotay* (UCL) ; arXiv: 1212.6457] and

[2] curvature of the moduli space of G_2 manifolds [*with Chris Lin* (Case Western) *and John Loftin* (Rutgers Newark) ; *in progress*].

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