

Title: On the (observer) moduli spaces of G_2 metrics

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Abstract: In his two seminal articles, Dominic Joyce not only constructed the first examples of closed manifolds with G_2 holonomy metrics, but also proved that the moduli space of all G_2 metrics on a closed manifold is itself a finite-dimensional manifold. The statement is, however, only a local one and the global topological properties of these moduli spaces have remained quite mysterious ever since. Indeed, up to now, we only know that these moduli spaces may be disconnected; the question whether all path components are contractible or not has not been answered yet.

On my poster, I will report on ongoing joint work with Sebastian Goette how to construct non-trivial elements in higher homotopy groups of the easier accessible *observer* moduli spaces and why these elements might also be non-trivial in the (full) moduli space.