# SEMINÁRIO DE GEOMETRIA

## 21 de Julho (sexta-feira), às 11:00, sala 6.2.33

# G2-instantons with symmetry

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**Abstract**: G2-instantons, are 7-dimensional analogs of anti-self-dual connections in 4 dimensions, which however require the underlying manifold to have a so called G2-structure. The interest on these G2-instantons comes from the suggestion, of Donaldson and Segal, that it may be possible to use them to define enumerative invariants of G2-holonomy Riemannian metrics. In the talk, I will explain these ideas and report on joint work with Jason Lotay where we give existence, non-existence and classification results for these instantons. I will focus in the particular case of $\mathbb{R}^4 \times S^3$, with its two explicitly known distinct G2-holonomy metrics, and exhibit the different behavior of their instantons. I will also explain an explicit example of sequences of G2-instantons where "bubbling" and "removable singularity" phenomena occur in the limit. All this is joint work with Jason Lotay.

**Local: FCUL – Edf. C6 - Piso 2, 6.2.33**