

New examples of $SU(2)^2$ -invariant G_2 -instantons

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Abstract

G_2 -instantons are a special kind of connections on a Riemannian 7-manifold, analogues of anti-self-dual connections in 4 dimensions. I will start this talk by giving an overview of known examples and why are we interested in them. Then, I will explain how we construct G_2 -instantons in $SU(2)^2$ -invariant cohomogeneity one manifolds and give new explicit examples of G_2 -instantons on $\mathbb{R}^4 \times S^3$ and $S^4 \times S^3$. I will then discuss the bubbling behaviour of sequences of G_2 -instantons found.