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Goncalo Oliveira* (oliveira@math.duke.edu). *Gauge Theory on G2 manifolds*. Preliminary report.

Gauge theoretical equations, as the instanton equation, have been used in low dimensions (less or equal than 4) with great success over the last 4 decades. When extra structure on the underlying manifold is available, one can extend some of these equations to higher dimensions and preserve their ellipticity modulo gauge. In this talk I will describe recent results related to one of these gauge theories on a G2 manifold. (Received September 05, 2015)