

Seminari de Geometria Algebraica 2012/2013 (UB-UPC)

Divendres 22 de març a les 15 hs, aula 101 FME-UPC

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## Spin(7)-instantons, stable bundles and the Bogomolov inequality for abelian 4-folds

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Using gauge theory for Spin(7) manifolds of dimension 8, we develop a procedure, called Spin-rotation, which transforms (stable) holomorphic structures on a vector bundle over a complex torus of dimension 4 into a new holomorphic structure over a different complex torus. We show non-trivial examples of this procedure by rotating a decomposable Weil abelian variety into a non-decomposable one. As a byproduct, we obtain a Bogomolov type inequality, which gives restrictions for the existence of stable bundles on an abelian variety of dimension 4, and show examples in which this is stronger than the usual Bogomolov inequality.

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