

# Seminario de Geometría y Topología



## **Real Clifford bundles and generalized constrained Killing spinors**

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### **Resumen:**

I will introduce the notion of constrained generalized Killing (CGK) spinor in the context of bundles of real Clifford modules over real Clifford bundles. The concept of generalized constrained Killing spinor is the mathematical formalization of the type of spinors that are found in physical theories such as Supergravity and String Theory. I will prove that a (CGK) is equivalent to a polyform taking values in an appropriately defined bundle of algebras which satisfies a particular differential and algebraic condition. In addition, I will discuss the topological obstructions for the existence of bundles of real Clifford modules on a pseudo-Riemannian manifold of arbitrary signature. This in turn provide the fundamental obstructions for the existence of supersymmetric field theories on a manifold. Time permitting I will use these results to prove that the real and complex versions of four-dimensional Supergravity, previously thought to be equivalent, are globally inequivalent.

**Lugar: Universidad Complutense de Madrid**  
**Facultad de Ciencias Matemáticas**

**Departamento de Geometría y Topología, Sala 225**

**Fecha y Hora: Martes, 2 de febrero de 2015, 12:00**

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