



Instituto Universitario de Investigación  
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Universidad Zaragoza



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Universidad Zaragoza

# Seminario Geometría y Topología

## Conferencia

por

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Título:

“Classification of nice nilpotent Lie algebras and construction of Einstein metrics”

### RESUMEN:

Nice nilpotent Lie algebras play an important role in the study of Ricci flow and in the construction of nilsolitons, as well as they can carry invariant Einstein pseudo-Riemannian metrics. However, to our best knowledge, there is a classification of such structures only for low dimension, and a construction theory is missing. In this talk we will present an algorithm to obtain nice nilpotent algebras, and we will also show that these nice Lie algebras are different in a suitable category. Moreover, we will give some examples and a constructive method to build special Einstein pseudo-Riemannian metrics (proving that there are some obstructions to their existence). We will discuss Einstein metrics with non-zero scalar curvature as well as Ricci-flat, and expose some open problems. This is a joint work with Diego Conti.

**Fecha:** Viernes, 1 de febrero de 2019

**Hora:** 13:00 horas

**Lugar:** Seminario D Geometría y Topología, Edificio de Matemáticas, 2ª planta