



Dipartimento di Matematica e Informatica  
Università degli Studi di Palermo

## Seminario di Algebra e Geometria

Giovedì 22 maggio 2025, ore 16:00

Aula 7, Via Archirafi 34, 90123 Palermo

- **ore 16:00, Ixchel Dzohara Gutiérrez Rodríguez**

*Departamento de Matemáticas, Universidade de Vigo, Spagna.*

**Conformally Einstein structures: the Lorentzian case**

**Abstract:** *One strategy to construct Einstein metrics involves deforming a given metric by a conformal factor so that the resulting metric is Einstein. In this talk, we will follow this approach with a special emphasis on dimension four, providing a complete description of four-dimensional conformally Einstein Lorentzian Lie groups.*

- **ore 16:40, Xabier García Martínez**

*Departamento de Matemáticas, Universidade de Santiago de Compostela, Spagna.*

**Poisson algebra methods in the invariant theory of pairs of matrices**

**Abstract:** *In this talk we will explain how we used methods coming from non-associative algebras and from computational algebra to obtain the full description of the ring of invariants of pairs of 4x4 matrices, which could not be solved using the standard representation theory methods. Moreover, we will talk about its connection with the Calogero-Moser spaces and the Hilbert scheme of points.*

*Joint work with Farkhod Eshmatov and Rustam Turdibaev.*

- **ore 17:20, Leo Margolis**

*Departamento de Matemáticas, Universidad Autónoma de Madrid, Spagna.*

**The Modular Isomorphism Problem**

**Abstract:** *The Modular Isomorphism Problem asked, if an isomorphism between modular group algebras of finite  $p$ -groups over a field of characteristic  $p$  implies an isomorphism of the group bases. We present positive and negative results, as well as open questions surrounding the problem.*

*Joint work with Taro Sakurai.*