



# Analysis, Algebra & Geometry Meetings

DIPARTIMENTO SMFI - UNIVERSITÀ DI PARMA

**21.03.20234**

**16:30**

SALA RIUNIONI - PLESSO DI MATEMATICA

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ON THE CLASSIFICATION OF NILPOTENT LIE ALGEBRAS

The classification of nilpotent Lie algebras is hopeless. Complete results are known in dimension  $\leq 6$  and partial results are known in dimension 7. Starting with dimension 8, things get quite bad. Nevertheless, there is an approach to this task which use classical projective geometry and might provide some results for specific types of nilpotent Lie algebras. In this talk we will explain this approach and use it to obtain a (partial) classification of 8-dimensional 2-step nilpotent Lie algebras over  $\mathbb{C}$  and  $\mathbb{R}$ . This is an ongoing project with R. Re (Università dell'Insubria) and J. Rojo (Universidad Politécnica de Madrid).