UNIVERSITÀ DI PARMA

DIPARTIMENTO DI SCIENZE MATEMATICHE, FISICHE E INFORMATICHE

http://smfi.unipr.it

Seminario

Prof. ssa **Adela Latorre**, Universidad Politécnica de Madrid

Complex structures on 8D nilpotent Lie algebras with small center

Venerdì 17 giugno 2022, ore **13:00**
Sala Riunioni, III piano, Plesso di Matematica

Tutti gli interessati sono invitati a partecipare
Organizzatore prof. Adriano Tomassini

Abstract.

Complex manifolds can be characterized as pairs (M, J), where M is a differentiable manifold of even dimension and J is an integrable almost-complex structure on M. Although the explicit construction of such J's has proven to be a difficult task, the problem can be slightly simplified when M is a nilmanifold and one restricts to the study of *invariant* complex structures on it. Under these assumptions, one can work on the nilpotent Lie algebra $\mathfrak{g}$ underlying M and focus on those J's defined on it. One can then distinguish two types of complex structures, depending on whether the center of $\mathfrak{g}$ admits a J-invariant subspace $\mathfrak{a}_J \neq \{0\}$ or not. In this talk, we will focus on the case $\mathfrak{a}_J = \{0\}$ and provide the complete classification of pairs $(\mathfrak{g}, J)$ for $\mathfrak{g}$ an 8-dimensional nilpotent Lie algebra.