

Seminario di Geometria

Giovedì 3 Novembre 2022, ore 14:15

AULA M1

Dipartimento di Matematica e Fisica
Università degli studi Roma Tre
Largo San Leonardo Murialdo 1

Speaker: **Prof. Gregory Pearlstein** (Pisa)

Title: *Rigidity and infinitesimal Torelli theorems for variations of mixed Hodge structures and applications to certain classes of elliptic surfaces*

Abstract: I will discuss joint work with Chris Peters which extends rigidity results of Arakalov, Faltings and Peters to period maps arising from families of complex algebraic varieties which are non-necessarily proper or smooth. Inspired by recent work with P. Gallardo, L. Schaffler, Z. Zhang, I will discuss two classes of elliptic surfaces which can be presented as hypersurfaces in weighted projective spaces which have a unique canonical curve. In each case, we will show that infinitesimal Torelli fails for H^2 of the compact surface, but is restored when one considers the period map for the complement of the canonical curve. We will also show that these period maps are rigid, in the sense that they do not admit any horizontal deformations which keep the source and target fixed.