

ALGEBRAIC GEOMETRY AND COMMUTATIVE ALGEBRA SEMINAR

Speaker: Emanuela Marangone

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Date: Tuesday, December 7, 2021

Time: 2:30 PM

Location: 125 Hayes-Healy Hall

Zoom URL:

Lecture Title:

The non-Lefschetz locus for vector bundle of rank 2 on \mathbb{P}^2

Abstract

A finite length graded R -module M has the Weak Lefschetz Property if there is a linear element ℓ in R such that the multiplication map $\times \ell : M_i \rightarrow M_{i+1}$ has maximal rank. The set of linear forms with this property form a Zariski-open set and its complement is called the non-Lefschetz locus. I focus on the study of the non-Lefschetz locus for the first cohomology module $H_*^1(\mathbb{P}^2, \mathcal{E})$ of a locally free sheaf \mathcal{E} of rank 2 over \mathbb{P}^2 . The main result is that this non-Lefschetz locus has the expected codimension under the assumption that \mathcal{E} is general.