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Title: On the classification of rank two ACM bundles on quartic hypersurfaces in \mathbb{P}^3

Abstract: Let X be an algebraic surface, and L be a very ample line bundle on X . Then we call a vector bundle E on X an Arithmetically Cohen-Macaulay (ACM for short) bundle with respect to L if $H^1(X, E \otimes L^{\otimes i}) = 0$, for any integer i . It is interesting to investigate the existence of indecomposable ACM bundles on X of higher rank with given Chern classes and give a classification of them. However, it is difficult to do them, even if X is a hypersurface in \mathbb{P}^3 .

In this talk, we consider ACM bundles of rank two on quartic hypersurface in \mathbb{P}^3 . Recently, Gianfranco Casnati has classified rank two ACM bundles on general determinantal quartic hypersurfaces in \mathbb{P}^3 , by the Chern classes and the zero locus of sections of them. I will recall his work and introduce my recent work about the classification of ACM bundles on quartic hypersurfaces in \mathbb{P}^3 .