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 $H^1(X,E\otimes L^\otimes l)=0$, for any integer $l$. 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 hypersurfaces 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 $\mathbb{P}^3$. 