A REPRESENTATION THEORETIC APPROACH TO EXCEPTIONAL SHEAVES ON THE PROJECTIVE n-SPACE.

I plan to talk on a representation theoretic approach to studying some problems in algebraic geometry. Let V be an $n+1$ dimensional vector space over an algebraically closed field $\Bbbk$, let $R = \bigwedge V$ be the exterior algebra on V, and let $S = \Bbbk[x_0, \cdots, x_n]$ be the polynomial algebra in $n+1$ indeterminates. Finally, let $\mathrm{coh}\mathbf{P}^n$ denote the category of coherent sheaves on the projective n-space. A coherent sheaf E is called *exceptional* if $\mathrm{Ext}^i(E, E) = 0$ for all $i > 0$ and, in addition E has an endomorphism ring isomorphic to $\Bbbk$. The talk will be on how to reduce certain problems about exceptional sheaves to working with linear modules over the exterior algebra. I will present results obtained in joint work with Otto Kerner.