

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

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