Dawid Kędzierski

Schofield Induction for sheaves on weighted projective lines

ABSTRACT: This is a report on joint work with Hagen Meltzer. Let $\mathbb{X}$ be a weighted projective line in the sense of Geigle and Lenzing. Recall that a coherent sheaf M is called exceptional if $\mathrm{Ext}^1_{\mathbb{X}}(M,M)=0$ and $\mathrm{End}_{\mathbb{X}}(M)$ is a skew field. We show that each exceptional sheaf M of rank greater than one can be obtained from exceptional sheaves X, Y of less ranks. More precisely, for each exceptional sheaf M there is an exact sequence

$$0 \longrightarrow 0 \longrightarrow Y^v \longrightarrow M \longrightarrow X^u \longrightarrow 0$$

such that $[u\ v]$ is the dimension vector of an exceptional representation of a generalized Kronecker algebra with $n=\mathrm{Ext}^1_{\mathbb{X}}(X,Y)$ arrows. Schofield induction has been applied by Ringel in order to describe exceptional modules over path algebras of quivers.