

The Gabriel-Roiter measure for representation directed algebra

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Abstract: Fix a basic representation directed algebra Λ over an algebraically closed field k .

For each indecomposable Λ module M which is not simple, by using the Gabriel-Roiter measure, we get a short exact sequence $0 \rightarrow T \rightarrow M \rightarrow M/T \rightarrow 0$ with T and M/T indecomposable. In fact we choose a Gabriel-Roiter submodule T of M . We want to present the properties of M/T , the Gabriel-Roiter factor module and the Hom space $\text{Hom}(T, M/T)$. We will also talk the motivations to these questions and some connection with other problems.