

An application of a theorem of Sheila Brenner for Hochschild extension algebras of a truncated quiver algebra

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Brenner [1] studied the number of indecomposable direct summands of the middle term of an almost split sequence starting with a simple module, and she showed how to determine this number for an artin algebra. As a consequence of this result she obtains, for a self-injective artin algebra, the number of indecomposable direct summands of $\text{rad } P/\text{soc } P$, where P is indecomposable projective. Moreover, Fernández-Platzeck [2] gave simple interpretation for of them the trivial extension algebra of an algebra. Their description is given in terms of oriented cycles in the ordinary quiver of the trivial extension algebra. In this talk, we will give a similar interpretation of a theorem of Sheila Brenner for Hochschild extension algebras which is a generalization of trivial extension algebras.

REFERENCES

1. S. Brenner, The almost split sequence starting with a simple module, *Arch. Math.* **62** (1994) 203–206.
2. E. Fernández, M. Platzeck, Presentations of trivial extensions of finite dimensional algebras and a theorem of Sheila Brenner, *J. Algebra* **249** (2002) 326–344.