

Cyclic homology of truncated quiver algebras and notes on the no loops conjecture for Hochschild homology

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This talk is based on joint work with Katsunori Sanada. In this talk, we show the dimension formula of the cyclic homology of truncated quiver algebras over an arbitrary field, and we extend the 2-truncated cycles version of the no loops conjecture to the m -truncated cycles version of the no loops conjecture for a class of finite dimensional algebras over an algebraically closed field.

In [6], for a truncated quiver algebra A over a commutative ring, Sköldberg gives a left A^e -projective resolution of A and computes the Hochschild homology $HH_n(A)$. By means of this result and a theorem in Loday's book (1992), Taillefer [7] gives a dimension formula of the cyclic homology of truncated quiver algebras over a field of characteristic zero.

We compute the dimension formula of the cyclic homology of truncated quiver algebras over an arbitrary field by means of chain maps in [1] and a spectral sequence. Our result generalizes the result of Taillefer into the case that the ground field is a field of any characteristic.

Moreover, we have a result for the m -truncated cycles version of the no loops conjecture as an application of the chain map in [1] used for the computation of cyclic homology of truncated quiver algebras. In [2], it is shown that the 2-truncated cycles version of the no loops conjecture holds by means of truncated quiver algebras, and the m -truncated cycles version of one is conjectured.

We show that the m -truncated cycles version of the no loops conjecture holds for a class of bound quiver algebras over an algebraically closed field as an application of the chain map from Cibils' projective resolution (cf. [3]) to Sköldberg's projective resolution given in [1].

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