On support τ-tilting modules over group algebras

Yuta Kozakai[*] and Ryotaro Koshio

Tokyo University of Science
E-mail: `kozakai@rs.tus.ac.jp`

Since τ-tilting theory was introduced by Adachi-Iyama-Reiten in 1, the theory continues to develop rapidly. The one of main themes of the theory is the study of support τ-tilting modules, and today, there are many studies of the modules for various kinds of algebras. In this talk, we consider the support τ-tilting modules for group algebras of finite groups.

Let k be an algebraically closed field of characteristic $p > 0$, $\tilde{G}$ a finite group, G a finite group, M a support τ-tilting kG-modules, and $\tilde{M}$ a support τ-tilting $k\tilde{G}$-module. We consider when $\tilde{M}$ is a support τ-tilting module as kG-module, and when the induced module $k\tilde{G} \otimes_{kG} M$ is a support τ-tilting $k\tilde{G}$-module. Moreover, as an application, we give a feature of vertices of the support τ-tilting modules for group algebras.

References

[1] T. Adachi, O. Iyama, I. Reiten, τ-tilting theory, Compos. Math. 150 (2014), no. 3, 415-452.