

Algebra/Topology Seminar

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$TC(\mathbb{A}[\Sigma_3]; p)$

Thursday, September 1, 2016

3:00 p.m. in ES-143

ABSTRACT. In recent joint work with Wolfgang Lück, Holger Reich, and John Rognes [[arXiv:1607.03557](https://arxiv.org/abs/1607.03557)], we proved a general induction theorem for the topological cyclic homology (TC) of group algebras of finite groups, in the spirit of Artin and Brauer induction in the representation theory of finite groups. The theorem states that, for any finite group G , for any ring (or connective ring spectrum) \mathbb{A} , and for any prime number p , $TC(\mathbb{A}[G]; p)$ is determined by $TC(\mathbb{A}[C]; p)$ as C ranges over the cyclic subgroups of G . Technically, we showed that the assembly map for the family of cyclic subgroups induces isomorphisms on all homotopy groups.

This result allows us to attack explicit computations for non-cyclic finite groups; more precisely, to reduce such computations to the cyclic subgroups. A lot is known about TC of cyclic groups, but for non-abelian groups most of the previously known methods of computation do not apply. In this talk I will describe explicitly how this works in the smallest example: that of the symmetric group Σ_3 .