

Lars Hesselholt: *Bi-relative algebraic K -theory and topological cyclic homology*

This is joint work with T. Geisser. It was recently proved by Cortiñas that, rationally, bi-relative algebraic K -theory and bi-relative cyclic homology agree. We show that, with finite coefficients, bi-relative algebraic K -theory and bi-relative topological cyclic homology agree. As an application of this general theorem, we show that for a possibly singular curve over a field k of positive characteristic p , the p -adic algebraic K -groups and the p -adic topological cyclic homology groups agree in degrees greater than or equal to r where $[k : k^p] = p^r$. As a further application, we show that the difference between the p -adic K -groups of the integral group ring of a finite group and the p -adic K -groups of a maximal \mathbb{Z} -order in the rational group algebra can be expressed entirely in terms of topological cyclic homology.