

## **On the Hochschild cohomology of finite group algebras**

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This talk is a survey on some aspects of the use of Hochschild cohomology in modular representation theory. We start with a description of some basic tools, including the centraliser decomposition, and the Siegel-Witherspoon double coset formula for the calculation of products in Hochschild cohomology of finite group algebras. Much of what follows is inspired by work of Dave Benson. We touch upon the regularity of Hochschild cohomology of block algebras, and describe one of the higher structures - the BV-operator – in terms of the centraliser decomposition. We finish with results on the Lie algebra structure of the first Hochschild cohomology of block algebras and various open questions and conjectures in this context.