## **Variations on Hochschild Cohomology**

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If D is the derived category of a ring or space, then there is a natural ring homomorphism from

Hochschild cohomology to the graded centre of that category, the Hochschild-Atiyah-Chern character.

This homomorphism is yet poorly understood and I will discuss what we know and what we want to know, as well as ingredients, such as residues and comparison of Hochschild and Hochschild-Mitchell cohomology, that may help to further our understanding.

I will also discuss the stabilized version of this homomorphism into the singularity category of a Gorenstein singularity.