1163-16-238   **Pablo S. Ocal***, pablosanchezocal@gmail.com. *The Gerstenhaber bracket in relative Hochschild cohomology.*

The Gerstenhaber bracket in the usual Hochschild cohomology was introduced by Gerstenhaber, who together with Schack used it to study deformations of algebras. Along the way, they essentially claimed that everything that can be done in Hochschild cohomology can also be done in relative Hochschild cohomology. However, they required a separability condition to obtain relative projective resolutions when working with diagrams of algebras. This additional requirement motivates contextualizing our work to relative homological algebra. This is a less general context but it has multiple advantages: we can remove the separability condition, proofs are approachable, computations can be carried out, and an there is an interpretation of the bracket as a dg Lie algebra structure on a complex. Recent results by Kaygun, who constructed a Jacobi-Zariski long exact sequence, and by Cibils, Lanzilotta, Marcos, Schroll, and Solotar, who described aspects of the Hochschild cohomology of bounded quiver algebras using relative cohomological tools, strongly suggests that this context may be adequate for a better understanding of the cohomology of associative algebras. (Received August 29, 2020)