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Pablo Ocal* (psoc@math.tamu.edu). *On the Gerstenhaber bracket in relative Hochschild cohomology of associative algebras.*

We will begin by briefly presenting the inception of the Gerstenhaber bracket in Hochschild cohomology, which helped in capturing in an algebraic way the infinitesimal information stored in the cohomology of the algebra. On the first uses of the bracket by Gerstenhaber and Schack, they essentially claimed that everything that can be done on 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 there is an interpretation of the bracket as a dg Lie algebra structure on a complex. We will also comment on 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. This strongly suggests that this context may be adequate for a better understanding of the cohomology of associative algebras. (Received February 13, 2020)