

Eduardo Marcos
 IME-USP, Brasil
 enmarcos@gmail.com

For a unital partial action α of a group G on an associative unital algebra A with a unital globalization $(\{\Theta_g\}_{g \in G}, \mathcal{W})$, we prove a natural isomorphism

$$\Lambda(HH_{\bullet}(A, M)) \cong HH_{\bullet}(\mathcal{W}, \mathfrak{A}(M))$$

for any covariant A -bimodule M . In particular if $M = A$, we obtain an isomorphism between their respective Hochschild homologies: $\Lambda(H_{\bullet}(A)) \cong H_{\bullet}(\mathcal{W})$.

Here $\mathfrak{A}$ is an exact functor relating the categories of covariant bimodules, while Λ is the exact globalization functor for partial representations of G . As an application, we show that under standard finiteness conditions, a commutative algebra A is smooth if and only if its globalization $\mathcal{W}$ is smooth.