

# BV-differential on Hochschild cohomology of Frobenius algebra.

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Let  $R$  be a Frobenius algebra over field  $k$  with Nakayama automorphism  $\nu : R \rightarrow R$ . We define the Gerstenhaber algebra  $\mathrm{HH}^*(R)^{\nu^\uparrow}$  which is isomorphic to  $\mathrm{HH}^*(R)$  if the order of  $\nu$  is a natural number which is not divisible by the characteristic of  $k$ . We construct the BV-differential on the algebra  $\mathrm{HH}^*(R)^{\nu^\uparrow}$ . Then we apply the obtained results to describe the Gerstenhaber algebra structure and BV-differential for one family of self-injective algebras of tree type  $D_n$ .