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## Explicit Chain Homotopic Function to Compute Hochschild Homology of the Polynomial Algebra

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**Abstract:** In this paper, an explicit homotopic function is constructed to compute the Hochschild homology of a finite dimensional free k-module V. Because the polynomial algebra is of course fundamental in the computation of the Hochschild homology HH and the cyclic homology CH of commutative algebras, we concentrate our work to compute HH of the polynomial algebra.by providing certain homotopic function.

Keywords: hochschild homology, homotopic function, free and projective modules, free resolution, exterior algebra,

symmetric algebra

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