

# Generalized Goldberg Formula

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*Abstract.* In this paper we prove a useful formula for the graded commutator of the Hodge codifferential with the left wedge multiplication by a fixed  $p$ -form acting on the de Rham algebra of a Riemannian manifold. Our formula generalizes a formula stated by Samuel I. Goldberg for the case of 1-forms. As first examples of application we obtain new identities on locally conformally Kähler manifolds and quasi-Sasakian manifolds. Moreover, we prove that under suitable conditions a certain subalgebra of differential forms in a compact manifold is quasi-isomorphic as a CDGA to the full de Rham algebra.