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Hayden M Harker* (haharker@vassar.edu), Vassar College, Box 572, 124 Raymond Ave., Poughkeepsie, NY 12604. *Derived functors of the locally finite functor*. Preliminary report.

Let M be a module over an algebra A . Define the functor $G : A\text{-modules} \rightarrow A\text{-modules}$ to be the locally finite functor where $G(M) = \{m \in M \mid Am \text{ is finitely generated as a vector space}\}$. When $A = \mathbb{Z}_2(e_1, e_2, \dots)$ is an exterior algebra over \mathbb{Z}_2 with a countably infinite number of generators, we present conditions under which the derived functors of G vanish. This case is of interest as a copy of A exists as a sub-Hopf algebra of the mod 2 Steenrod algebra. (Received September 27, 2005)