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**John E Harper\*** ([john.edward.harper@gmail.com](mailto:john.edward.harper@gmail.com)), EPFL SB IGAT GR-HE, BCH 5115  
(Batiment BCH), 1015 Lausanne, Switzerland. *On a Whitehead theorem for topological Quillen  
homology of algebras and modules over operads.*

In Haynes Miller's proof of the Sullivan conjecture on maps from classifying spaces, Quillen's derived functor notion of homology (in the case of commutative algebras) is a critical ingredient. This suggests that homology for the larger class of algebraic structures parametrized by an operad  $O$  will also provide interesting and useful invariants. Working in the context of symmetric spectra, we prove a Whitehead theorem for topological Quillen homology of algebras and modules over operads. This is part of a larger goal to attack the problem: how much of an  $O$ -algebra can be recovered from its topological Quillen homology? This talk is an introduction to these results (joint with K. Hess) with an emphasis on several of the motivating ideas. (Received June 02, 2010)