1077-55-1672 **John E Harper*** (john.edward.harper@gmail.com). *Localization and completion with respect to topological Quillen homology.*

Quillen's derived functor notion of homology provides interesting and useful invariants in a wide variety of homotopical contexts. For instance, in Haynes Miller's proof of the Sullivan conjecture on maps from classifying spaces, Quillen homology of commutative algebras (André-Quillen homology) is a critical ingredient. Working in the topological context of symmetric spectra, this talk will introduce several recent results on localization and completion with respect to topological Quillen homology of commutative ring spectra (topological André-Quillen homology), E_n ring spectra, and operad algebras in spectra. This includes homotopical analysis of a completion construction and strong convergence of its associated homotopy spectral sequence—analogous to results by Bousfield-Kan on the R-completion of spaces—and a description of a point-set model of the derived comonad (or cotriple) that coacts on the object underlying topological Quillen homology; in other words, topological Quillen homology is a coalgebra over this comonad. Several of the results are joint work with Michael Ching and Kathryn Hess. (Received September 20, 2011)