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Niles Johnson* (niles@uga.edu) and **Justin Noel**. *Obstruction theory for E_∞ maps*. Preliminary report.

We take an obstruction-theoretic approach to the question of algebraic structure on spectra. At its heart, this is an application of the Bousfield-Kan spectral sequence adapted for general operadic structure in a range of topological categories. This talk will focus on examples from rational homotopy theory which illustrate the obstructions to rigidifying homotopy algebra maps between differential graded algebras to strict algebra maps. In the topological context, these provide explicit examples of H_∞ maps which cannot be rigidified to E_∞ maps. (Received September 21, 2011)