Algebra/Topology Seminar

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On the Adams Isomorphism for Equivariant Orthogonal Spectra — Part 3

Thursday, October 3, 2013
1:15 p.m. in ES-143

ABSTRACT. This series of talks has two goals. The first one is to present a reasonably self-contained introduction to equivariant orthogonal spectra, a modern framework for equivariant stable homotopy theory. The second one is to report on joint work with Holger Reich, in which we give a natural construction and a direct proof of the Adams isomorphism for equivariant orthogonal spectra. In particular I will define and explain all the technical terms used in the following paragraph, which is a more detailed abstract for the last talk of the series.

> "For any finite group G, any normal subgroup N of G, and any orthogonal G-spectrum X, we construct a natural map A of orthogonal G/N-spectra from the homotopy N-orbits of X to the derived N-fixed points of X, and we show that A is a stable weak equivalence if X is N-free. This recovers a theorem of Lewis, May, and Steinberger in the equivariant stable homotopy category, which in the case of suspension spectra was originally proved by Adams. We emphasize that our 'Adams map' A is natural even before passing to the homotopy category. One of the main tools we develop is a fibrant replacement construction with good functorial properties, which we believe is of independent interest."