1096-55-2615 **Irina Bobkova*** (bobkova@math.northwestern.edu). *Towards a resolution of the spectrum $E^{h\mathbb{S}_2^1}$ at the prime 2.*

Chromatic homotopy theory uses the algebraic geometry of formal groups to organize calculations. In particular, at each prime p there exists a series of homology theories $K(n)$, called Morava K-theories and we can reconstruct the homotopy type of p-local spectra from their Morava K-theories localizations. When $n = 2$ a lot of information can be derived from the action of a certain profinite group, called the Morava stabilizer group, on the Lubin-Tate theory. We can form homotopy fixed points spectra with respect to this action and compute their homotopy groups using continuous group cohomology. We discuss a generalization to prime 2 of work of Goerss-Henn-Mahowald-Rezk on constructing a tower of fibrations, whose inverse limit is the spectrum $E_2^{h\mathbb{S}_2^1}$, a "half" of the K(2)-local sphere. The successive fibers of the tower are homotopy fixed points spectra with respect to specific finite subgroups of the Morava stabilizer group. This makes the computations accessible as it is possible to make very detailed calculations with finite subgroups using the theory of elliptic curves. (Received September 17, 2013)