

1095-55-99

Andrew Salch* (asalch@math.wayne.edu). *Arithmetic classification of finite odd-primary $E(1)$ -local spectra*. Preliminary report.

Let p be an odd prime and let $E(1)$ be p -primary height 1 Johnson-Wilson homology.

1. We produce a totally explicit classification of all $E(1)$ -local stable homotopy types of finite CW-complexes. We then run the $E(1)$ -local Adams-Novikov spectral sequence for each of these stable homotopy types to compute the $E(1)$ -local stable homotopy groups of all finite CW-complexes.

2. We use the above classification together with the theory of F -crystals to associate, to each finite CW-complex, a p -adic Galois representation—that is, a finitely generated Z_p -module equipped with an action by the absolute Galois group of Q_p . We then show that the $E(1)$ -local stable homotopy type of the CW-complex can be recovered from the Galois representation, and we demonstrate some relationships between the orders of the $E(1)$ -local stable homotopy groups of the CW-complex and special values of a p -local Euler factor associated to the F -crystal. We will try to argue that this should be thought of as a kind of "topological Artin reciprocity."

3. If there's time remaining, we demonstrate some work in progress: using the above to prove the $E(1)$ -local generating hypothesis; and doing the same things at height 2. (Received September 02, 2013)