

1137-55-294

Krishanu Roy Sankar* (sankark1991@gmail.com), 3550 W 1st Avenue, Vancouver, BC V6R 1G8, Canada. *Steinberg summands and symmetric powers of the equivariant sphere spectrum.*

The mod p Steenrod algebra is the (Hopf) algebra of stable operations on mod p cohomology. This algebra can be computed in several possible ways: one way is to filter the Eilenberg-MacLane spectrum $H\mathbb{F}_p$ using the finite symmetric powers of the sphere spectrum. The cofibers of this filtration are Steinberg summands (from the representation theory of $GL_k(\mathbb{Z}/p)$) of the classifying spaces $B(\mathbb{Z}/p)^k$.

Our main result is to lift this to G -equivariant stable homotopy theory, where G is any finite abelian p -group (the main case of interest being a cyclic p -power group). We can thus compute the G -equivariant Steenrod algebra by decomposing the G -equivariant classifying space of \mathbb{Z}/p - we'll describe this computation for $G = C_p$. When $p = 2$ and $G = C_2$, the equivariant dual Steenrod algebra is known due to Hu-Kriz and others, but at odd primes this is new. If there is time, we will then discuss a conjectured construction of the equivariant analogues of the Milnor operations (the indecomposables in the dual Steenrod algebra), as well as some current applications in homotopy theory. (Received February 05, 2018)