

Meeting: 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-55-1639 **Ryan S. Higginbottom*** (higginbottom@virginia.edu), Department of Mathematics, P.O. Box 400137, University of Virginia, Charlottesville, VA 22904-4137. *The action of $\text{Out}(P)$ on $H^*(P; \mathbb{F}_p)$.*

Let P be a finite p -group and let $e \in \mathbb{F}_p[\text{Out}(P)]$ be an idempotent element. One can show that $eH^*(P; \mathbb{F}_p)$ is finitely generated over a Noetherian ring, and thus it makes sense to ask about the Krull dimension of $eH^*(P; \mathbb{F}_p)$. Martino and Priddy posed the following question in 1992: when is this dimension maximal? That is, when is this dimension equal to the p -rank of P ? We present several sufficient conditions which ensure that a group has this property. Our techniques involve the nilpotent filtration of the category of unstable modules over the Steenrod algebra. (Received October 05, 2004)