

1024-17-90

**David J Benson** and **Sunil K Chebolu\*** (schebolu@uwo.ca), Department of Mathematics, University of Western Ontario, London, Ontario N6A 5B7, Canada, and **J Daniel Christensen** and **Ján Mináč**. *Tate cohomology often fails to detect “null-homotopy”*. Preliminary report.

Let  $G$  be a finite  $p$ -group and let  $k$  be field of characteristic  $p$ . A map of finite dimensional  $kG$ -modules that factors through a projective module clearly induces the zero map in Tate cohomology. A natural question is whether the converse is true. In this talk, I will determine the  $p$ -groups for which the converse always holds, and for the groups for which the converse fails, I will introduce an integer invariant which measures the degree of the failure, and will show how to get bounds on this integer invariant.

This is joint work in progress with Dave Benson, Dan Christensen and Ján Mináč, and is motivated by a conjecture of Peter Freyd in homotopy theory that goes under the name of *generating hypothesis*. (Received January 02, 2007)