1114-20-235 **Jon F. Carlson** and **Peter Webb*** (webb@math.umn.edu). *The graded center of a stable module category.*

The graded center of a triangulated category consists of the natural transformations from the identity functor to powers of the shift functor that commute, modulo a sign, with the shift functor. In the case of the stable module category of a block algebra of a finite group, the graded center is closely related to the Tate cohomology and Hochschild cohomology of the block. We show that elements of the graded center which are non-zero on only a single shift orbit are necessarily of a kind previously constructed by Linckelmann. Under extra conditions, elements which are non-zero on only finitely many shift orbits are sums of Linckelmann's elements. We show by example that tame block algebras allow a kind of graded center element which cannot arise with wild block algebras. The proofs use Auslander-Reiten theory extensively. (Received August 28, 2015)