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Neil M Epstein* (neilme@umich.edu), Department of Mathematics, University of Michigan, Ann Arbor, MI 48109. *Some aspects of phantom homology*. Preliminary report.

Let R be a Noetherian ring of prime characteristic p .

A complex of R -modules is said to have *(stably) phantom homology* at a given spot n if the homology at n "vanishes (stably) up to tight closure" – that is, if the cycles are in the tight closure of the images (and if this holds also for all Frobenius powers of the complex). From this notion, one obtains tight closure analogues of resolutions, acyclicity, zero-divisors, depth, rigidity, etc. In this talk, some recent results in this area will be presented. (Received August 15, 2005)