

1126-13-155

Andrew R. Kustin*, kustin@math.sc.edu. *Degree bounds for local cohomology.*

Let R be a non-negatively graded Cohen-Macaulay ring with R_0 a Cohen-Macaulay factor ring of a local Gorenstein ring. Let $d = \dim R$, \mathfrak{m} be the maximal homogeneous ideal of R , and M be a finitely generated graded R -module.

It has long been known how to read information about the socle degrees of the local cohomology module $H_{\mathfrak{m}}^0(M)$ from the twists in position d in a resolution of M by free R -modules. It has also long been known how to use local cohomology to read valuable information from complexes which approximate resolutions in the sense that they have positive homology of small Krull dimension. The present paper reads information about the maximal generator degree (rather than the socle degree) of $H_{\mathfrak{m}}^0(M)$ from the twists in position $d - 1$ (rather than position d) in an approximate resolution of M .

This is joint work with Claudia Polini and Bernd Ulrich. (Received January 10, 2017)