Artinianness of Composed Graded Local Cohomology Modules

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Abstract. Let $R = \bigoplus_{n\geq 0} R_n$ be a graded Noetherian ring with local base ring $(R_0, \mathfrak{m}_0)$ and let $R_+ = \bigoplus_{n>0} R_n$, M and N be finitely generated graded R-modules and $\mathfrak{a} = \mathfrak{a}_0 + R_+$ an ideal of R. We show that $H^j_{\mathfrak{b}_0}(H^i_{\mathfrak{a}}(M,N))$ and $H^i_{\mathfrak{a}}(M,N)/\mathfrak{b}_0 H^i_{\mathfrak{a}}(M,N)$ are Artinian for some i's and j's with a specified property, where $\mathfrak{b}_o$ is an ideal of R_0 such that $\mathfrak{a}_0 + \mathfrak{b}_0$ is an $\mathfrak{m}_0$-primary ideal.