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ON THE ASSOCIATED PRIME IDEALS OF LOCAL COHOMOLOGY MODULES DEFINED BY A PAIR OF IDEALS

Maryam Jahangiri[1]

Faculty of Mathematical Sciences and Computer
Kharazmi University, Tehran, Iran
and
School of Mathematics
Institute for Research in Fundamental Sciences (IPM)
P.O. Box 19395-5746, Tehran, Iran

e-mail: mjahangiri@ipm.ir
jahangiri.maryam@gmail.com

Zohreh Habibi and Khadijeh Ahmadi Amoli

Payame Noor University
P.O. Box 19395-3697, Tehran, Iran

e-mail: z_habibi@pnu.ac.ir
khahmadi@pnu.ac.ir

Abstract

Let I and J be two ideals of a commutative Noetherian ring R and M be an R-module. For a non-negative integer n it is shown that, if the sets $\mathrm{Ass}_R(\mathrm{Ext}^n_R(R/I, M))$ and $\mathrm{Supp}_R(\mathrm{Ext}^i_R(R/I, H^j_{I,J}(M)))$ are finite for all $i \leq n+1$ and all $j < n$, then so is $\mathrm{Ass}_R(\mathrm{Hom}_R(R/I, H^n_{I,J}(M)))$. We also study the finiteness of $\mathrm{Ass}_R(\mathrm{Ext}^i_R(R/I, H^n_{I,J}(M)))$ for $i = 1, 2$.

Keywords: local cohomology modules defined by a pair of ideals, spectral sequences, associated prime ideals.

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[1] Corresponding author.

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