

TOP LOCAL COHOMOLOGY AND THE CATENARICITY OF THE UNMIXED  
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**TÓM TẮT:**

Let  $(R, \mathfrak{m})$  be a Noetherian local ring and  $M$  a finitely generated  $R$ -module with  $\dim M = d$ . This paper is concerned with the following property for the top local cohomology module:  $\text{Ann}_R(H^d_{\mathfrak{m}}(M)) \subseteq \mathfrak{p}$  for all  $\mathfrak{p}$  contains  $\text{Ann}_R(H^d_{\mathfrak{m}}(M))$ . In this article we will show that this property is equivalent to the catenaricity of the unmixed support  $\text{USupp } M$  of  $M$  which is defined by  $\text{USupp } M = \text{Supp } M / \text{UM}(0)$ , where  $\text{UM}(0)$  is the largest submodule of  $M$  of dimension less than  $d$ . Some characterizations of this property in terms of system of parameters as well as the relation between the unmixed supports of  $M$  and of its  $\mathfrak{m}$ -adic completion are given.