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**Patricia J Klein\*** ([triciajk@umich.edu](mailto:triciajk@umich.edu)), MI. *Conditions on Koszul cohomology guaranteeing finite length local cohomology.*

Let  $(R, m)$  be a local ring,  $I$  an  $m$ -primary ideal, and  $M$  a finitely-generated  $R$ -module. We will begin by giving background on the relationship between the length of  $M/IM$ , the multiplicity of  $I$  on  $M$ , and the length of the Koszul homology of a set of generators of  $I$  on  $M$ . There is a sense in which these values are all close if and only if enough of the local cohomology modules of  $I$  on  $M$  are finite length. We will describe this new test for finiteness of lengths of local cohomology modules. (Received February 20, 2018)