Annihilation of Cohomology, Generation of Modules and Finiteness of Derived Dimension

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In this talk we briefly review some basic concepts of uniform annihilation of cohomology and finiteness of derived dimension of module-finite Λ . Also close link between these two concepts will be revealed. In addition, we present situations that guarantee the existence of a uniform annihilation of cohomology as well as situations in which this property can be transferred between the base ring and its completion. We also show that when (R; m) is a commutative Noetherian local ring, the R-modules locally free on the punctured spectrum are constructed from syzygies of finite length modules by taking direct sums/summands and d extensions.