



WVU ALGEBRA SEMINAR via ZOOM

Annihilator of Tor and Ext of subcategories of module category

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Abstract: Uniform annihilation of Ext and Tor of various subcategories of the module category is closely related to the notion of "dimension" of subcategories, a concept first introduced for subcategories of module category by Dao and Takahashi. Nice behavior of the annihilator of Ext and Tor implies (and is implied by) nice bounds on the dimension of corresponding subcategory. Although it was shown by Dao and Takahashi that some nice behavior of the annihilator of Ext implies that of Tor, the converse was not known in general. In this talk after briefly introducing these notions of annihilator of Ext and Tor of subcategories and how they relate to the notion of dimension of a subcategory, we will present some results, obtained by the speaker in recent joint work with Ryo Takahashi, pertaining to when annihilator of Ext of certain subcategories exactly coincides (at least up to radical) with the annihilator of Tor of the same.