

The representation theory of the Dubrovin-Puninski ring

Abstract: Let R be a nearly simple uniserial domain and $X = R/cR$ a cyclically presented torsion R -module. The Dubrovin-Puninski ring is the endomorphism ring $S = \text{End}_R X$. In this talk, I will first describe the ideals of S and use them to explain what the finitely presented S -modules are. Once we know these, I will describe 5 flat resolutions of the finitely presented simple injective module. Each of these five resolutions has distinct features, and they will be used to describe the Ziegler spectrum of S , and to determine all the tilting and cotilting classes of S -modules. The 1-tilting module and the 2-tilting module are both pure projective, but not tilting equivalent to finitely presented modules. This answers in the negative a question of Parra & Saorin regarding the heart of a t -structure in the derived category of S -modules.