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Universal deformation rings of string modules over a class of self-injective special biserial algebras

Let k be an algebraically closed field, let Λ be a finite dimensional k-algebra and let V be a Λ-module whose stable endomorphism ring isomorphic to k. If Λ is self-injective, then V has a universal deformation ring $R(\Lambda, V)$, which is a complete local commutative Noetherian k-algebra with residue field k. Moreover, if Λ is further a Frobenius k-algebra, then $R(\Lambda, V)$ is stable under syzygies. We use these facts to determine the universal deformation rings of string Λ_N-modules with stable endomorphism ring is isomorphic to k, and which lie in a connected component of the stable Auslander-Reiten quiver of Λ_N containing a module with endomorphism ring isomorphic to k. Here $N \geq 1$ and Λ_N is a self-injective special biserial k-algebra whose Hochschild cohomology ring is a finitely generated k-algebra as proved by N. Snashall and R. Taillefer. This is a joint-work with Yohny Calderon-Henao, Hernan Giraldo and Ricardo Rueda-Robayo.