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Adriana M. Fonce-Camacho, Hernan Giraldo, Pedro Rizzo and Jose A Velez-Marulanda* (javelezmarulanda@valdosta.edu). *A deformation theory of finite dimensional modules over repetitive algebras.*

Let Λ be a basic finite dimensional algebra over an algebraically closed field \mathbf{k} , and let $\widehat{\Lambda}$ be the repetitive algebra of Λ . In this article, we prove that if \widehat{V} is a left $\widehat{\Lambda}$ -module with finite dimension over \mathbf{k} , then \widehat{V} has a well-defined versal deformation ring $R(\widehat{\Lambda}, \widehat{V})$, which is a local complete Noetherian commutative \mathbf{k} -algebra whose residue field is also isomorphic to \mathbf{k} . We also prove that $R(\widehat{\Lambda}, \widehat{V})$ is universal provided that $\underline{\text{End}}_{\widehat{\Lambda}}(\widehat{V}) = \mathbf{k}$ and that in this situation, $R(\widehat{\Lambda}, \widehat{V})$ is stable after taking syzygies. We apply the obtained results to finite dimensional modules over the repetitive algebra of the 2-Kronecker algebra, which provides an alternative approach to the deformation theory of objects in the bounded derived category of coherent sheaves over $\mathbb{P}_{\mathbf{k}}^1$. The results presented in this talk will appear in the journal *Algebras and Representation Theory*. (Received August 05, 2021)