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Maximal Cohen-Macaulay modules that are not locally free on the punctured spectrum.

(English) [Zbl 1455.13023]


Summary: We say that a Cohen-Macaulay local ring has finite $\text{CM}_+$-representation type if there exist only finitely many isomorphism classes of indecomposable maximal Cohen-Macaulay modules that are not locally free on the punctured spectrum. In this paper, we consider finite $\text{CM}_+$-representation type from various points of view, relating it with several conjectures on finite/countable Cohen-Macaulay representation type. We prove in dimension one that the Gorenstein local rings of finite $\text{CM}_+$-representation type are exactly the local hypersurfaces of countable $\text{CM}$-representation type, that is, the hypersurfaces of type $(A_\infty)$ and $(D_\infty)$. We also discuss the closedness and dimension of the singular locus of a Cohen-Macaulay local ring of finite $\text{CM}_+$-representation type.

MSC:
13C60 Module categories and commutative rings
13H10 Special types (Cohen-Macaulay, Gorenstein, Buchsbaum, etc.)
16G60 Representation type (finite, tame, wild, etc.) of associative algebras

Keywords:
Cohen-Macaulay ring; isolated singularity; maximal Cohen-Macaulay module; punctured spectrum; representation type; singular locus

Full Text: DOI

References:


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