

ON CERTAIN COMPLEXES OF FLAT COTORSION MODULES

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Using Enochs' Theorem for flat cover of cotorsion modules over commutative Noetherian rings, which establishes a unique decomposition to a direct product of $T_{\mathfrak{p}}$'s for a flat cotorsion module, we introduce a complex of flat cotorsion modules as an analogue of dualizing complexes. It turns out that these complexes, which will be referred as \mathcal{F} -complexes, have properties similar - or rather dual - of dualizing complexes. We shall also obtain a connection between \mathcal{F} -complexes and local cohomology modules over a local ring.