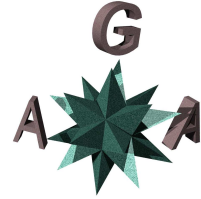




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Cotorsion theories and Σ -pure injective cotilting modules

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Let R be a ring. Given a cotorsion pair $\mathfrak{A} := (\mathcal{A}, \mathcal{A}^\perp)$ in the category of right R -modules $\text{Mod-}R$, we denote by \mathfrak{A}_ℓ the cotorsion pair generated by the modules M in \mathcal{A} which admit a resolution

$$P_\ell \rightarrow \dots \rightarrow P_1 \rightarrow P_0 \rightarrow M \rightarrow 0$$

with P_i , $0 \leq i \leq \ell$ finitely generated projective modules. We compare the cotorsion theories \mathfrak{A}_ℓ , looking for conditions which guarantee the equalities $\mathfrak{A}_\ell = \mathfrak{A}_{\ell+n}$, $n \in \mathbb{N}$, and / or $\mathfrak{A}_\ell = \mathfrak{A}$. Particular emphasis is dedicated to cotorsion theories cogenerated by a cotilting module in the Noetherian case.