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Relative exact covers

Comment.Math.Univ.Carolinae 42,4 (2001) 601-607.

Abstract: Recently Rim and Teply [11] found a necessary condition for the existence of σ -torsionfree covers with respect to a given hereditary torsion theory for the category $R\text{-mod}$. This condition uses the class of σ -exact modules; i.e. the σ -torsionfree modules for which every its σ -torsionfree homomorphic image is σ -injective. In this note we shall show that the existence of σ -torsionfree covers implies the existence of σ -exact covers, and we shall investigate some sufficient conditions for the converse.

Keywords: precover, cover, hereditary torsion theory σ , σ -injective module, σ -exact module, σ -pure submodule

AMS Subject Classification: 16D90, 16S90, 18E40