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Research on properties of the projective object in the category of $\Omega$-left $R$-modules. (Chinese. English summary) Zbl 07448812

Summary: In this paper, we introduce the concept of projective object in the category of $\Omega$-left $R$-modules. The equivalent descriptions of an projective object in the category of $\Omega$-left $R$-modules are investigated. The fact that a product of a bunch of $\Omega$-left $R$-modules is a projective object if and only if every one is a projective object is proved. An $\Omega$-left $R$-module is a projective object if and only if it’s every cut set is proved to be a projective object.

MSC:
18G25 Relative homological algebra, projective classes (category-theoretic aspects)

Keywords:
category of $\Omega$-left $R$-module; category of $\Omega$-sets; projective object