VI International Conference on Mathematics and its Applications in Science and Engineering
(ICMASE 2025)

ICMASE 2025

A SHORT NOTE ON r-SUBMODULES AND sr-SUBMODULES

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ABSTRACT

Let M be a module over a commutative ring R. Recall from [3] that a proper submodule N of M is said to be an r-submodule (special r-submodule, or briefly, sr-submodule) if whenever $am \in N$ with $ann_M(a) = 0_M$ ($ann(m) = 0$) for some $a \in R$ and $m \in M$, then $m \in N$ ($a \in (N : M)$). Recently, the notion of r-submodules and sr-submodules has attracted the attention of many researchers. For instance, in [1] and [2], Anebri et al. studied ascending and descending chain conditions on r-submodules. Afterwards, in [4] Mahdou et al. characterized modules satisfying Property (A) and Property (T) in terms of r-submodules and sr-submodules. In this study, we introduce a new generalization of r-submodules and use it to characterize some important classes of modules.

***K*eywords** r-submodule · sr-submodule · r-ideal

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