Some Results on ADS modules*

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Abstract: In this talk, using type submodules and ADS modules,we introduce type-ADS modules. In [**?**], Fuchs calls a right module M over a ring R ADS if for every decomposition $M = S \oplus T$ and every complement T' of S, we have $M = S \oplus T'$. In [**?**], Zhou calls a submodule N of M type submodule, written $N \leq^t M$, if N is a submodule of type $\mathcal{K}$ for some natural class $\mathcal{K}$. Let N and Q be two submodules of M. Q is called a type complement of N in M if Q is maximal with respect to $N \perp Q$ (see [**?**]). From definition about ADS module and type complement, we provide definition and characterizations about type-ADS module. We call an R-module M *type-ADS* if for every decomposition $M = S \oplus T$ of M with type submodules S, T and every arbitrary type complement T' of S, we have $M = S \oplus T'$. We prove that every ADS module is type-ADS, but the converse is not true. We also give and provide several new characterizations of this new class of modules.

References

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