

ON Φ -NOETHERIAN MODULES

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Throughout this talk R is a commutative ring with a nonzero identity and M is a unitary R -module. A submodule N of M is called a nilpotent submodule if $(N :_R M)^n N = 0$ for some positive integer n . An element $m \in M$ is said to be nilpotent if Rm is a nilpotent submodule of M . We let $Nil(M)$ to denote the set of all nilpotent elements of M ; then $Nil(M)$ is a submodule of M provided that M is a faithful module, and if in addition M is multiplication, then $Nil(M) = Nil(R)M = \bigcap P$, where the intersection runs over all prime submodules of M . A submodule N of M is said to be a nonnil submodule if N is not contained in $Nil(M)$.

M is called a Nonnil-Noetherian module if every nonnil submodule of M is finitely generated. In this talk we study the basic properties of Nonnil-Noetherian modules as a generalization of Noetherian modules.