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Radical Submodules and Uniform Dimension of Modules

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Abstract: We investigate the relations between a radical submodule N of a module M being a finite intersection of prime submodules of M and the factor module M/N having finite uniform dimension. It is proved that if N is a radical submodule of a module M over a ring R such that M/N has finite uniform dimension, then N is a finite intersection of prime submodules. The converse is false in general but is true if the ring R is fully left bounded left Goldie and the module M is finitely generated. It is further proved that, in general, if a submodule N of a module M is a finite intersection of prime submodules, then the module M/N can have an infinite number of minimal prime submodules.

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