

HOPFIAN AND CO-HOPFIAN MODULES OVER COMMUTATIVE RINGS

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A characterization of Artinian rings is given using the notions semi Hopfian and semi co-Hopfian modules. These notions are introduced here and they generalize the notions Hopfian and co-Hopfian modules. Also, it is shown that an R -module M is semi Hopfian (resp. semi co-Hopfian) $R[X]$ -module.