ORTHOGONAL IDEALS IN GROUP RINGS

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In this note we define orthogonal ideals in a group ring and obtain conditions under which a group ring can have orthogonal ideals, projective modules over bounded hereditary Noetherian prime rings. Our main theorem asserts that if R is a bounded hereditary Noetherian prime ring then a right R-module is finitely projective if and only if its reduced part is torsionless and coseparable. The finite projectivity is a pure-hereditary property of modules over bounded hereditary Noetherian prime rings. We also prove that if R is right bounded, right Noetherian prime, left Goldic ring then every finitely projective right R-module is projective if and only if R is simple artinian.