

Warfield Invariants in Abelian Group Rings

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ABSTRACT

Let R be a perfect commutative unital ring without zero divisors of $\text{char}(R) = p$ and let G be a multiplicative abelian group. Then the Warfield p -invariants of the normed unit group $V(RG)$ are computed only in terms of R and G . These cardinal-to-ordinal functions, combined with the Ulm-Kaplansky p -invariants, completely determined the structure of $V(RG)$ whenever G is a Warfield p -mixed group.

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