

Nora Krauß

On twisted group rings and Galois-stable ideals

Abstract:

Let A be a Dedekind domain with perfect field of fractions K . Let B be the integral closure of A in a finite Galois extension $L|K$ of degree n , with Galois-group G . We consider a Wedderburn isomorphism of the twisted group ring $L \rtimes G$ to $K^{\{n \times n\}}$. In some exemplary cases we determine a description of the image of this isomorphism restricted to $B \rtimes G$ and to $A^{\{n \times n\}}$, via congruences of matrix entries. By means of this description we give an example of a twisted group ring $B \rtimes G$ containing an ideal that does not originate from some Galois-stable ideal of B . In case of A being a finite extension of \mathbb{Z} we give a formula to compute the index of the image of $B \rtimes G$ in $A^{\{n \times n\}}$.