The Hermitian-Galois Module Structure of the Square Root

$L/K :=$ finite weakly ramified G-Galois extension of number fields. Suppose $|G| =$ odd, then $\exists \mathcal{A}_{L/K}$ such that $(\mathcal{A}_{L/K})^2 = (\mathcal{D}_{L/K})^{-1}$.

Conjecture (Bley, Burns and Hahn)

$$\mathfrak{a}_{L/K} = \mathfrak{c}_{L/K} \in K_0(\mathbb{Z}[G], \mathbb{Q}[G]).$$

Theorem

$L/K :=$ p-extension that p is unramified in K,

$$n(L/K) \cdot \mathfrak{a}_{L/K} = n(L/K) \cdot \mathfrak{c}_{L/K} = 0 \in K_0(\mathbb{Z}[G], \mathbb{Q}[G]).$$

where $n(L/K) :=$ maximal order of a decomposition subgroup in G of a wildly ramified place.