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An Analogue of Pfister's Local-Global Principle in the Burnside Ring

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ABSTRACT. Let N/K be a Galois extension with Galois group $\mathcal{G}$. We study the set $\mathcal{T}(\mathcal{G})$ of $\mathbb{Z}$-linear combinations of characters in the Burnside ring $\mathcal{B}(\mathcal{G})$ which give rise to $\mathbb{Z}$-linear combinations of trace forms of subextensions of N/K which are trivial in the Witt ring $\mathrm{W}(K)$ of K. In particular, we prove that the torsion subgroup of $\mathcal{B}(\mathcal{G})/\mathcal{T}(\mathcal{G})$ coincides with the kernel of the total signature homomorphism.

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