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Abstracts of Short Communications and Posters

Section:

3. Number Theory and Arithmetic Algebraic Geometry

1991 MS Classification:

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Wild kernel for higher K-groups and arithmetic of square rings

In a joint work with W. Gajda, P. Krason and P. Zelewski we define in a natural way a subgroup $WK_n(F)$ of $K_n(F)$, called "wild kernel". This subgroup is always finite and we conjecture that:

$$WK_n(F) = divK_n(F)$$

up to 2-torsion, for all non-negative n and all number fields F. $divK_n(F)$ denotes the subgroup of divisible elements in $K_n(F)$. The case $n = 2$ was considered by Tate and Bass many years ago. It turns out that our conjecture is equivalent to Quillen-Lichtenbaum conjecture for $F = Q$ and $n > 1$. The equivalence for other number fields is proven under some condition on K - groups of local fields.

We use a description of higher K-groups as $SK_1(F_n)$ where F_n is the square ring, to investigate further the wild kernel $WK_n(F)$.