

ALGEBRA AND NUMBER THEORY
SEMINAR

Symbol length over C_r fields

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Abstract: A field F is called C_r if every homogenous form of degree n in more than n^r variables has a non-trivial solution. Consider a central simple algebra A of exponent n over a field F . By the Merkurjev-Suslin theorem assuming F contains a primitive n -th root of unity, A is similar to the product of symbol algebras. The smallest number of symbols required is called the *length* of A and is denoted $l(A)$. If F is C_r we prove $l(A) \leq n^{r-1} - 1$. In particular the length is independent of the index of A .

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