

UNIVERSAL QUADRATIC FORMS, SMALL NORMS AND TRACES IN FAMILIES OF NUMBER FIELDS

MAGDALÉNA TINKOVÁ (Czech Technical University in Prague)

ABSTRACT: In this talk, we will focus on universal quadratic forms over number fields, and in particular, on the minimal number of variables that these forms must have. One way how to find both upper and lower bounds on this minimal number is to determine the structure of additively indecomposable integers in these fields. We will show it for the family of the simplest cubic fields $\mathbb{Q}(\rho)$ where ρ is a root of the polynomial $x^3 - ax^2 - (a + 3)x - 1$ where $a \in \mathbb{Z}$, $a \geq -1$. This is joint work with Vítězslav Kala.

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