Uniform bounds for the number of integers represented by systems of Abelian norm forms

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Abstract

Let $K_1, \dots, K_m$ be finite Abelian extensions over $\mathbb{Q}$ with pairwise coprime discriminants. For $j = 1, \dots, m$ let F_j be the corresponding normform. Let $U_{\mathbf{F}}$ denote the number of integers $n \in [-x, x]$ that can be represented by all forms F_j, $j = 1, \dots, m$. In this paper sharp upper and lower bounds for $U_{\mathbf{F}}$ are derived that are uniform in $K_1, \dots, K_m$.

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