BOSTON UNIVERSITY NUMBER THEORY SEMINAR

Malle's conjecture on Frobenius groups

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Monday, November 5 at 4:15 pm
111 Cummington Mall, MCS B21
Tea and cookies in MCS 144 at 4:00 pm

Abstract: We attain upper bounds for the number of degree d algebraic extensions K/k with Galois group $G = F \rtimes H \leq S_d$ as the norm of the discriminant $\mathcal{N}_{k/\mathbb{Q}}(d_{K/k})$ is bounded above by $X \to \infty$. Precisely we look at the following cases, if $d = |G|$ we assume that F is abelian and if $d = |F|$, we assume that G is a Frobenius group with F abelian. Malle made a conjecture about what the asymptotic of this quantity should be as d and G vary. We show that under a conjecture of about the size of the class group, the upper bounds we achieve, match the prediction of Malle.