Brandon Alberts* (brandon.alberts@uconn.edu). Counting Solvable Extensions of Number Fields.

Fix a finite group $G$ and a number field $K$. How many $G$-extensions $L/K$ are there with $\text{disc}(L/K) < X$, taken as $X$ tends towards infinity? This is in general a difficult question, at least as hard as the inverse Galois problem. In this talk, I will outline the proof of an upper bound for this quantity when $G$ is solvable, which is conditional on the size of the $\ell$-torsion of class groups of number fields with fixed degree. The new conditional bounds give evidence in support of Malle’s conjecture, and can be used to prove unconditional bounds which improve on previously known results when $G$ is “nearly nilpotent”. (Received February 02, 2019)