Explicit bounds for the generators of the class group

Giuseppe Molteni

Università di Milano

The classical Minkowski's bound for the set of the generator of the class group of a number field K grows essentially as the square root of its absolute discriminant Δ_K. As a consequence it becomes quickly unpractical. Eric Bach showed in '90th that the situation improves dramatically if one assumes the validity of GRH: in this case the prime ideals whose norm is lower than $12(\log \Delta_K)^2$ are a full set of generators, and that the result improves to $(4+o(1))(\log \Delta_K)^2$ asymptotically. I will show some recent results on this problem, in particular that $4(1+11^{-[K:Q]})^2(\log \Delta_K)^2$ already suffices. This work has been made in collaboration with Loc Grenié.