

The average size of the 2-torsion in class groups of cubic fields

Arul Shankar

Manjul Bhargava proved that the average number of 2-torsion elements in the class groups of cubic fields having positive (resp. negative) discriminant is $5/4$ (resp. $3/2$). These averages (which are in accordance with the Cohen–Lenstra heuristics) do not change if we instead average over cubic fields with prescribed ramification at finitely many primes.

In this talk, I shall discuss how these averages *do* change when we impose certain global conditions (such as monogenicity) on cubic fields. This is joint work with Manjul Bhargava and Jonathan Hanke.