

Jean-Morlet Chair - Conference
Arithmetic Statistics - Statistiques arithmétiques

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Title: *Effective enumeration of quartic number fields*

Abstract: For $n > 1$ and $X > 0$, let $C_n(X)$ denote the set of isomorphism classes of number fields of degree n with absolute discriminant less than X . The best general algorithm known to enumerate $C_n(X)$ is the Hunter-Martinet method, which is conjecturally not optimal for $n > 2$. Belabas used some work of Davenport-Heilbronn to develop an optimal algorithm for $n = 3$. I will show how to use analogous results of Bhargava to get a new algorithm for $n = 4$, which is faster than the Hunter-Martinet method.