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Moments of unramified 2-group extensions of quadratic fields

We discuss the Cohen-Lenstra heuristics from the point of view of counting unramified number field extensions of quadratic fields. We will focus on the specific case of 2-group extensions of quadratic fields which has proven to be more tractable in recent years. We will put forth a conjecture about asymptotics and distributions of such extensions (beyond those considered by Cohen and Lenstra) and discuss our recent progress on this in the case of extensions with Galois groups which are central extensions of $\mathbb{F}_2^n$ by $\mathbb{F}_2$.