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The fourth moment of quadratic Dirichlet L -functions

In 2010, Soundararajan and Young established the asymptotic formula for the second moment of quadratic twists of a cusp form under the generalized Riemann hypothesis (GRH). They also unconditionally obtained the sharp lower bound which matches Keating-Snaith's conjecture. In this talk, I will discuss the fourth moment of quadratic Dirichlet L -functions. Largely based on Soundararajan and Young's work, we obtained the asymptotic formula under GRH, and also the sharp lower bound unconditionally.