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Matthew P Young* (myoung@math.tamu.edu), Department of Mathematics, Texas A&M University, College Station, TX 77845, and **K Soundararajan**. *The second moment of quadratic twists of a modular L-function.*

The family of quadratic twists of a modular form (or the corresponding family of L-functions) has been intensively studied by many researchers. One particularly strong motivation is for understanding ranks of quadratic twists of elliptic curves. I will discuss recent work (joint with K. Soundararajan) where we obtain an asymptotic formula for the second moment of central values of this family of L-functions, conditionally on GRH. Unconditionally, we show that the second moment is no smaller than the conditional asymptotic. (Received September 11, 2008)