962-11-1044 **Adrian Diaconu** (cad@math.columbia.edu), Mathematics Dept., Columbia University, New York City, NY 10027, and **Jeffrey Hoffstein*** (jhoff@math.brown.edu), Mathematics Dept., Brown University, Providence, RI 02912. *Multiple Dirichlet series and moments of quadratic L-series, I.* Preliminary report.

We'll describe a Dirichlet series in $m+1$ complex variables and show how a simple conjecture about its analytic properties implies a precise asymptotic description for the mean value of $L(1/2, \chi_d)^m$, as d varies over fundamental discriminants of quadratic fields. For $m = 1, 2, 3$ the asymptotics can actually be proved by these methods, as illustrated in previous work of Bump, Friedberg and Hoffstein. For $m \geq 4$ the conjectured formulas seem to agree with conjectures on these moments arrived at by Keating and Snaith using techniques from random matrix theory. (Received October 01, 2000)