Title: Twisted quadratic moments for Dirichlet L-functions at $s = 2$

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Let c, n be given positive integers. Let $q > 2$ be coprime with c. Let X_q be the multiplicative group of order $\phi(q)$ of the Dirichlet characters modulo q. Set

$$M(q,c,n) := \frac{2}{\phi(q)} \sum_{\substack{\chi \in X_q \\ \chi(-1)=(-1)^n}} \chi(c)|L(n,\chi)|^2.$$

The goal of this paper is to explain how one can compute explicit formulas for $M(q,c,n)$ for given small integers n and c. As an example, we give explicit formulas for $M(q,c,2)$ for $c \in \{1,2,3,4,6\}$, and for $M(p,5,2)$ for p a prime integer. As a consequence, we show that a previously published formula for $M(p,3,2)$ is false.

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