ERRATUM: “ON THE COMPUTATION OF LOCAL COMPONENTS OF A NEWFORM”

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Proposition 4.1 (1) of this article is not correct as stated. For instance, if \( \varepsilon \) is the quadratic Dirichlet character of conductor 15, then there are two newforms in \( S_k(\Gamma_1(15), \varepsilon) \) with coefficients in \( \mathbb{Q} \), and these are twists of each other by the quadratic character of conductor 3, whereas the quantity \( u \) in the proposition is 0 here. I am grateful to Steve Donnelly for pointing out this example.

The correct statement is the following. Let \( f \) be a newform of level \( Np^r \), with \( p \nmid N \), and character \( \varepsilon = \varepsilon_N\varepsilon_p \), where \( \varepsilon_N \) has conductor prime to \( p \) and the conductor of \( \varepsilon_p \) is \( p^c \). Let \( u = \min(\lfloor \frac{r}{2} \rfloor, r - c) \).

**Theorem.** In the notation of Proposition 4.1 of the article, if \( \chi \) is a Dirichlet character of conductor \( p^v \) with \( v > u \), then \( f_\chi \) is new of level \( Np^{\max(2v,c+v)} > Np^r \), unless \( v = c \) and \( \chi \) is of the form \( \varepsilon_p^{-1}\chi' \), where \( \chi' \) has conductor dividing \( p^{v-1} \).

In the latter case, the unique newform attached to \( f_\chi \) has level \( Np^r \) unless \( \chi' \) has conductor dividing \( p^{u} \).

**Proof.** By Theorem 3.1(ii) of [1], \( f_\chi \) is new of level \( Np^{\max(2v,c+v)} \), unless \( \varepsilon_p\chi \) has conductor strictly less than \( p^{\max(c,v)} \). \( \square \)

**References**