ERRATUM TO "ON THE ANTICYCLOTOMIC IWASAWA MAIN CONJECTURE FOR MODULAR FORMS"

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The hypothesis (CR+) (3) and (4) in [CH15, page 865] should be replaced by the following stronger one:

(3) $\bar{\rho}_f$ is ramified at ℓ if either of the following holds:

$$\text{(i)} \, \ell \mid N^- \text{ and } \ell^2 \equiv 1 \, (\mathrm{mod} \, p), \quad \text{(ii)} \, \ell \mid N^+.$$

(4) $\bar{\rho}_f|_{I_\ell}$ is irreducible if $\ell^2 \mid N^+$ and $p \mid \ell - 1$.

This is because Proposition 1.9 (2) does NOT hold when $\bar{\rho}_f$ is unramified at some prime $\ell \mid N^+$, which causes troubles in the proofs of Proposition 6.8 and its key consequence Corollary 6.9 concerning the freeness of certain Selmer groups. Thus, the main results (Theorem 1 and Corollary 2) are actually proved only in the *minimal* case in the sense that the Artin conductor of the residual Galois representation $\bar{\rho}_f$ agrees with N. In the general case, Corollary 6.9 can be proved by combining the vanishing of anticyclotomic μ-invarinats, results in the minimal case and Iwasawa theoretic techniques. Details can be found in [KPW17].

References

[CH15]   M. Chida and M.-L. Hsieh, *On the anticyclotomic Iwasawa main conjecture for modular forms*, Compositio Mathematica **151** (2015), no. 5, 863–897.

[KPW17] Chan-Ho Kim, Robert Pollack, and Tom Weston, *On the freeness of anticyclotomic Selmer groups of modular forms*, Int. J. Number Theory **13** (2017), no. 6, 1443–1455.