

# ERRATUM TO “ON THE ANTICYCLOTOMIC IWASAWA MAIN CONJECTURE FOR MODULAR FORMS”

MASATAKA CHIDA AND MING-LUN HSIEH

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  $\ell$  if either of the following holds:

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

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  $\mu$ -invariants, 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.