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CORRECTION TO "TWISTED S-UNITS, p-ADIC CLASS NUMBER FORMULAS, AND THE LICHTENBAUM CONJECTURES"

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C. Greither pointed out that in our paper "Twisted S-units, p-adic class number formulas, and the Lichtenbaum conjectures," the proof of the remark following Theorem 3.2 bis is incorrect, since the diagram on page 692 does not commute. In fact, the statement of the remark does not seem to be correct without further assumptions on the norm-compatible system $(V_n)_{n\geqslant 1}$. Since the only application of the result was for the special case of the norm-compatible system (C_n') of circular S-units introduced in Section 5, we would like to offer the following correction in this case.

PROPOSITION. *Let F be an abelian number field and let $m \neq 0, 1$. If $m < 0$, assume that Conjecture (C_m) holds. Then the map*

$$\bar{C}'_\infty(m-1)_{G_\infty} \to \bar{U}'_\infty(m-1)_{G_\infty}$$

is injective.

Proof. Let us first prove the injectivity of the map

$$\bar{C}_\infty(m-1)_{G_\infty} \to \bar{U}_\infty(m-1)_{G_\infty}.$$

This is done by showing that the kernel of this map is both finite and $\mathbb{Z}_p$-torsion–free, and therefore trivial. To prove finiteness we use an argument essentially due to Soulé (cf. [3, Section 6]) in the special case $F = \mathbb{Q}$. We consider the exact sequence of class-field theory (cf. eq. (5) on p. 699):

$$0 \to \bar{U}_\infty/\bar{C}_\infty \to \bar{U}_{p,\infty}/\bar{C}_\infty \to \mathscr{X}_\infty \to X_\infty \to 0.$$

Theorem 5.2—due to Villemot—implies that the $+$-eigenspaces $(\bar{U}_{p,\infty}/\bar{C}_\infty)^+$ and $\mathscr{X}_\infty^+$ have the same characteristic polynomial, and hence the same is true for $(\bar{U}_\infty/\bar{C}_\infty)^+$ and X_∞^+. By assumption, (C_m) holds for all $m \neq 0, 1$, and hence the group $X'_\infty(m-1)^{G_\infty}$ is finite. It is well known that the latter condition is equivalent to the finiteness of $X_\infty(m-1)^{G_\infty}$. (This follows, e.g., from [1, Theorem 9].) Since

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