CORRECTION TO "ELLIPTIC CURVES OVER FUNCTION FIELDS"

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There are two errors in Proposition 6.1 and formula (6.3) in Lecture 3 of [Ulm11]. The first is a typo in the table; the last row should read:

non-split IV^*	-1	0	5	2

The second is that there is a missing case. Namely, at a place y where the reduction type is I_0^*, the geometric non-identity components of multiplicity one in the fiber may be permuted by Frobenius in one of three ways: trivially, by a 2-cycle, or by a 3-cycle. The first case is our "split I_0^*" and the second is our "non-split I_0^*." The third case is missing in our analysis. In this case, the local zeta function has the form

$$\begin{aligned} Z(\pi^{-1}(y),T) &= \frac{1}{(1-T)(1-q_yT)}\,\frac{1}{(1-q_yT)(1-(q_yT)^3)} \\ &= \frac{1}{(1-T)(1-q_yT)^3(1+q_yT+(q_yT)^2)}. \end{aligned}$$

References

[Ulm11] D. Ulmer, *Elliptic curves over function fields*, Arithmetic of L-functions (Park City, UT, 2009), 2011, pp. 211–280.

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