CORRECTION TO
“CURVES AND JACOBIANS OVER FUNCTION FIELDS”

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There is a gap in the proof of Proposition 4.1 in [Ulm14] for a general ground field $k$. The issue is in the penultimate paragraph on page 301, where it is asserted:

More generally, if $\phi : A \to A'$ is a surjective morphism of abelian varieties over a field $k$, then we claim that the map of points $A(k) \to A'(k)$ has finite cokernel. If $\phi$ is an isogeny, then considering the dual isogeny $\phi^\vee$ and the composition $\phi \phi^\vee$ shows that the cokernel is killed by $\deg \phi$, so is finite.

This implicitly assumes that $A'(k)$ is finitely generated. The argument is correct if $k$ is finitely generated (by the Lang-Néron theorem) or if $k$ is algebraically closed (since $\phi$ is then surjective on points).

This step in the proof is definitely incorrect for some ground fields (such as $p$-adic fields), and I do not know if the full statement of Proposition 4.1 is correct over a general field $k$.

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REFERENCES


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