Torsion on Abelian Varieties
over Large Algebraic Extensions
of Finitely Generated Extensions of $\mathbb{Q}$

by

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Abstract: Let K be a finitely generated extension of $\mathbb{Q}$ and A a non-zero abelian variety over K. Let $\tilde{K}$ be the algebraic closure of K and $\mathrm{Gal}(K) = \mathrm{Gal}(\tilde{K}/K)$ the absolute Galois group of K equipped with its Haar measure. For each $\sigma \in \mathrm{Gal}(K)$ let $\tilde{K}(\sigma)$ be the fixed of σ field in $\tilde{K}$. We prove that for almost all $\sigma \in \mathrm{Gal}(K)$ there exist infinitely many prime numbers l such that $A_l(\tilde{K}(\sigma)) \neq 0$. This completes the proof of a conjecture of Geyer-Jarden from 1978 in characteristic 0.