

Oberseminar Arithmetische Geometrie:
Finiteness properties for flat cohomology of varieties over finite fields

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February 2, 2019

We prove the finiteness of $H^1(X_{\text{fl}}, G)$ for X a proper normal variety over a finite field and G/X a finite flat commutative group scheme. This can be applied to the invariance of the p -part of an analogue of the Birch-Swinnerton-Dyer conjecture for Abelian schemes over higher dimensional varieties over finite fields under non-étale isogenies and generically étale alterations of the base. Furthermore, we prove the finiteness of the p -part of the Brauer group of a product of smooth proper curves and Abelian varieties over finite fields.