

On the rank of abelian varieties over function fields

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Let C/k be a smooth projective irreducible curve defined over a number field k , $K = k(C)$ its function field, A/K an abelian variety and B/k its K/k -trace. A theorem of Neron and Lang states that the group $A(K)/B(k)$ is a finitely generated abelian group. Given a finite k -Galois cover C'/C of C with function field $K' = k(C')$ let $A' = A \times K'/K'$. We analyze how the rank of $A'(K')/B(k)$ varies in terms of the conductor of A vis-a-vis Ogg's geometric bound.