Cohomological formula for the measure of $X(K)$, where X is an abelian variety or a K3 surface over a local field K

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Abstract

Let X be a smooth scheme over a local field K. Given a top degree differential form ω on X one can construct a measure μ_ω on $X(K)$. If X has a good reduction, Lefschetz formula gives an expression for $\mu_\omega(X(K))$ in terms of cohomology groups of X. We will present partial results of this sort in the case when X has a bad reduction.