Degenerations of p-adic volume forms.

Abstract:

Let $X$ be an $n$-dimensional smooth projective variety over a non-Archimedean local field $K$, such as the $p$-adic numbers, and let $\omega$ be an global $n$-form on $X$. The set $X(K)$ of $K$-points on $X$ has the structure of a $K$-analytic manifold, and $\omega$ induces a measure $|\omega|$ on $X(K)$. For any finite extension $K'$ of $K$, there is a natural continuous map from $X(K')$ to the Berkovich analytification $X^{\text{an}}$ of $X$. We study the asymptotics of the images of the measures $|\omega \otimes_K K'|$ on $X^{\text{an}}$ as $K'$ runs through towers of finite extensions of $K$. This is joint work with Johannes Nicaise.