

# Séminaire de théorie des nombres

Le 22 mars 2010 à 14h

## Logarithmic equidistribution of division points on superelliptic curves

Exposé de Robin de Jong  
(University of Leiden )

**Résumé :** A superelliptic curve is a curve over a number field  $K$  given by an equation  $y^N = f(x)$ , with suitable conditions on  $f$  and  $N$ . On such curves one has the notion of  $n$ -division points, generalizing the notion of  $n$ -torsion points on elliptic curves. We prove that the Néron-Tate height, restricted to the canonical image of  $X$  in its jacobian, satisfies a Mahler type formula, i.e. can be written as a sum, over all places of  $K$ , of certain local logarithmic integrals over  $X$ . Also we prove that for almost all algebraic points on  $X$  these local integrals can be computed by averaging over the  $n$ -division points of  $X$ , and letting  $n$  tend to infinity. For elliptic curves these results were shown by Everest-ni Fhlathuin and Everest-Ward. Our proofs involve, among other things, an application of potential theory on (Berkovich) analytic curves, and an application of Faltings's diophantine approximation on abelian varieties.