ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

3. Number Theory and Arithmetic Algebraic Geometry

1991 MS Classification: 14G05
Peyre, Emmanuel, Université de Strasbourg, France

Heights and Tamagawa measures

If V is a smooth geometrically integral variety over a number field k such that the anticanonical sheaf ω_V^{-1} is very ample, then any basis of the space of sections $\Gamma(V, \omega_V^{-1})$ defines an embedding of V in a projective space and a height on $V(k)$. Manin had conjectured that, in general, the asymptotic behavior of the number of points of bounded height on V should have the form

$$CH(\log H)^{t-1} \quad \text{when} \quad H \to +\infty$$

where t is the rank of the Picard group of V and C a real constant. An empirical formula for C will be presented with various evidences in its favor.
Reference: E. Peyre, *Hauteurs et mesures de Tamgawa sur les variétés de Fano*, Duke Math. J. **79** (1995) 101–218