Séminaire de théorie des nombres

Le 20 février à 14h

Difference varieties and algebraic varieties

Exposé de Ehud Hrushovski

Résumé : A difference equation is a polynomial equation involving also a symbol σ for a ring endomorphism. Classically, difference equations arose as discrete analogs of differential equations, with $f^{\sigma}(x) = f(x+1)$ for f in some function field. An example over $\mathbf{Z}$ is $X^{\sigma^2} X^6 = X^{5\sigma}$; the solution set in $(\overline{\mathbf{Q}}, \sigma)$ is a group of roots of unity depending on an automorphism σ of $\overline{\mathbf{Q}}$ (all roots of unity for certain σ.) I will survey some of the model theory of difference varieties, with emphasis on their arithmetic nature.