

Workshop : « Explicit Arithmetic Geometry »

Organized by John CREMONA (Nottingham)

December 6th to December 10th, 2004

*All lectures take place in Amphitheatre Hermite
Institut Henri Poincaré – Centre Émile Borel
11 rue Pierre et Marie Curie, 75005 Paris – France*

*Tea/Coffee in the second floor lounge.
The reception will be in the ground floor cafeteria area.*

Monday December 6

10.00 – 10.50 Samir SIKSEK (Sultan Qaboos, Oman) : A Multiply Exponential Diophantine Spree

10.50 – 11.10 Pause café

11.10-12.00 Reinier BRÖKER (Leiden) : Constructing elliptic curves in polynomial time

14.00 – 14.50 David BURNS (Kings College London) : Computational results and problems related to the equivariant Tamagawa number conjecture

15.00 – 15.40 Christophe DELAUNAY (EPFL Lausanne) :
Moments of orders of Tate-Shafarevich groups

15.40 – 16.15 Pause thé

16.15 – 18.15 Don ZAGIER (Collège de France) : Fonctions Theta VII

Tuesday December 7

10.00 – 10.50 Ronald VAN LUIJK (UC Berkeley) :
K3 surfaces with Picard number 1 and infinitely many rational points

10.50 – 11.10 Pause café

11.10 – 12.00 Mark LINGHAM (Nottingham) :
Modular forms over imaginary quadratic number fields

14.00 – 14.50 Cathy O'NEIL (MIT) : The Geometry of Explicit Descent of Elliptic Curves

15.00 – 15.50 Johnny EDWARDS (Utrecht) : Solutions to $X^2+Y^3=dZ^r$ in Finite Fields

15.50 – 16.30 Pause thé

16.30 – 17.20 Martine GIRARD (Sydney) : Maximality of the Weierstrass subgroup

Wednesday December 8

10.00 – 10.50 Nils BRUIN (Simon Fraser)
Visibility of $\text{Sha}[2]$ of Jacobians of curves of genus 2

10.50 – 11.10 Pause café

11.10 – 12.00 Tom FISHER (Cambridge)
Computing models for visible elements of the Tate-Shafarevich group

Wednesday afternoon free

Thursday December 9

10.00 – 10.50 Mark VAN HOEIJ (Florida State) : Conics over Function Fields

10.50 – 11.10 Pause café

11.10 – 12.00 David KOHEL (Sydney) : Constructive CM by p-adic lifting

14.00 – 14.50 Robert CARLS (Leiden) : Computing the AGM using Mumford's theta functions

15.00 – 15.50 Marc HINDRY (Jussieu) :
Golomb's Lambda calculus, Schinzel and the Bateman-Horn conjecture

15.50 – 16.30 Pause thé

16.30 – 17.20 STAMMINGER (IU Bremen) : Towards 8-descent on elliptic curves

17.30 – 18.20 Martin BRIGHT (Liverpool) : Efficient calculation of the Brauer-Manin obstruction

18.30 Reception

Friday December 10

10.00 – 10.50 Michael STOLL (IU Bremen) : Covers and rational points

10.50 – 11.10 Pause café

11.10 – 12.00 Steve DONELLY (IU Bremen) :
Finding elliptic curves with Shafarevich-Tate groups having elements of certain orders

Friday afternoon :

Séminaire Variétés rationnelles (Orsay - ENS)
(J.-L. Colliot-Thélène, D. Harari, P. Gille)

14.30 – 15.30 Bjorn POONEN (UC Berkeley) : The Brauer-Manin obstruction for curves

15.30 – 16.00 Pause thé

16.00 – 17.00 Alexei SKOROBOGATOV (Imperial College London) :
2-descente sur les courbes elliptiques et points rationnels sur certaines surfaces de Kummer (I)

17.30 – 18.30 Peter SWINNERTON-DYER (Cambridge) :
2-descent on elliptic curves and rational points on certain Kummer surfaces (II)