Volkswagen Foundation Student Workshop on

Arithmetic Geometry and Data Security

Department of Mathematics, University of Stellenbosch

6 − 9 April 1999

Organizers: *G. Frey, B. Green, R. Omar, H.-G. Rück, B. van der Merwe*

Venue: *Van der Sterr Building, 3018, 3021, 2016.*

For the workshop there will be 4 themes, each consisting of three 1 hour lectures. Computer implementation sessions are also planned as far as possible.

Tuesday 6 April:

8.00 - 9.00: *Computation of small lattice bases and cryptosystems I*, Hans-Georg Rück, (3018).

9.15 - 10.15: *Elliptic Curves and the Discrete Logarithm I: Class groups of imaginary fields*, Matthias Traulsen, (3021).

10.30 - 11.30: *Tea/Discussion, (2016).*

12.10 - 13.00: *Factorisation of polynomials I*, Rafiq Omar, (3018).

13.00 - 14.00: *Lunch*

14.00 - 15.00: *Factorisation of polynomials II*, Sheldon Joyner, (3021).

15.00 - 15.45: *Tea/Coffee.*

15.45 - 16.45: **Colloquium:** *Fermat's Last Theorem and Cryptograpy*, Gerhard Frey, (3021).

Wednesday 7 April:

8.30 - 9.30: *Computation of small lattice bases and cryptosystems II*, Jan van Vuuren, (3018).

9.30 - 10.30: *Tea/Implementation/Discussion, (2016).*

10.30 - 11.30: *Factorisation of polynomials III*, Barry Green, (3018).

11.45 - 12.45: *Computation of small lattice bases and cryptosystems III*, Student, (3018).

13.00 - 14.00: *Lunch*

14.00 - 17.00: *Computer Implementation Session.*

Thursday 8 April:

8.30 - 9.30:   *Elliptic Curves and the Discrete Logarithm II: Discrete Logarithm Systems*, Gerhard Frey, (3018).

10.30 - 11.30:   *Elliptic Curves and the Discrete Logarithm III*, Brink van der Merwe, (3018).

11.30 - 12.30:   *Tea/Implementation/Discussion, (2016).*

13.00 - 14.00:   *Lunch.*

15.00 - 16.00:   **Special Lecture UCT:** *The Tate Pairing on Elliptic Curves,* Hans-Georg Rück.

14.00 - 18.00:   *Outing*:

Friday 9 April:

8.30 - 9.30:   *Factoring Polynomials over the Integers I*, Barry Green.

9.45 - 10.45:   *Factoring Polynomials over the Integers II*, Arnold Keet.

11.00 - 12.30:   *Tea/Implementation/Discussion, (2016).*

13.00 - 14.00:   *Lunch together with the University Dean of Science.*

14.00 - 15.00:   *Planning session.*

15.00 — :   *Outing*: Visit to a wine farm.

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