

UNIVERSITY OF DURHAM

London Mathematical Society Conference on Pro-p Groups and Related Topics

Monday, 14th July 1997 - Thursday, 24th July 1997

Tuesday, 15th July

10.00 a.m. - 10.10 a.m.	Welcome and administrative announcements
10.10 a.m. - 11.00 a.m.	Structure and classification of pro-p groups <i>Charles Leedham-Green</i> "An overview"
11.00 a.m. - 11.40 a.m.	Coffee break
11.40 a.m. - 12.30 p.m.	Number Theory <i>Nigel Boston</i> "Pro-p Galois groups and Galois representations - an interplay." 1. Introduction to p-adic Galois representations."
12.30 p.m. - 2.10 p.m.	Lunch break
2.10 p.m. - 3.00 p.m.	Lie theory <i>Aner Shalev</i> "Fixed point theorems for residually finite torsion groups"
3.00 p.m. - 3.40 p.m.	Tea
3.40 p.m. - 4.30 p.m.	Probabilistic Aspects <i>Avinoam Mann</i> "Positively finitely generated groups 1. Characterisation"
4.40 p.m. - 5.30 p.m.	Trees <i>Rostislav Grigorchuk</i> "Residually finite p-groups and groups of intermediate growth I"
6.30 p.m.	<i>Sherry reception</i>

Wednesday, 16th July

- 9.10 a.m. - 10.00 a.m. Structure and classification of pro-p groups
Michael Newman "Finite and soluble pro-p groups"
- 10.10 a.m. - 11.00 a.m. Number Theory
Nigel Boston "Pro-p Galois groups and Galois representations - an interplay.
2. Applications to and from pro-p Galois theory."
- 11.00 a.m. - 11.40 a.m. Coffee break
- 11.40 a.m. - 12.30 p.m. Lie theory
Efim Zelmanov "Groups of finite width and the idea of locality"
- 12.30 p.m. - 2.00 p.m. Lunch break
- 2.00 p.m. **Group photograph** (to be taken outside Holgate House, Grey College)
- 2.20 p.m. - 3.10 p.m. Trees
Rostislav Grigorchuk "Residually finite p-groups and groups of intermediate growth II"
- 3.10 p.m. - 3.40 p.m. Tea
- 3.40 p.m. - 4.30 p.m. Probabilistic Aspects
Avinoam Mann "PFG groups 2. Examples"
- 4.40 p.m. - 5.10 p.m. *Alan Reid* "p-adic Lie groups in low-dimensional topology"
- 5.10 p.m. - 5.40 p.m. *Carlo Scoppola* "p-groups and pro-p groups with restricted normal structure"
- 6.15 p.m. - 7.00 p.m. Problem Session I (Grey College common room)

Thursday 17th July

- 9.10 a.m. - 10.00 a.m. Structure and classification of pro-p groups
Charles Leedham-Green "p-adic analytic (insoluble) pro-p groups"
- 10.10 a.m. - 11.00 a.m. Number Theory
Nigel Boston "Pro-p Galois groups and Galois representations - an interplay.
3. The Fontaine-Mazur conjecture."
- 11.00 a.m. - 11.40 a.m. Coffee break

Thursday, 17th July (continued)

11.40 a.m. - 12.30 p.m.	Lie theory <i>Efim Zelmanov</i> "On Golod-Shafarevich groups"
12.30 p.m. - 2.10 p.m.	Lunch break
2.10 p.m. - 3.00 p.m.	Subgroup growth and zeta functions <i>Alex Lubotzky</i> I
3.00 p.m. - 3.40 p.m.	Tea
3.40 p.m. - 4.30 p.m.	Probabilistic Aspects <i>Avinoam Mann</i> "PFG groups 3. Zeta-function?"
4.40 p.m. - 5.30 p.m.	Trees <i>Said Sidki</i> "On the growth of tree automorphisms"
6.15 p.m. - 7.00 p.m.	Problem Session II (Grey College)

Friday, 18th July

9.10 a.m. - 10.00 a.m.	Structure and classification of pro-p groups <i>Charles Leedham-Green & David Cartwright</i> "Linear, non p-adic analytic pro-p groups"
10.10 a.m. - 11.00 a.m.	Number Theory <i>Ivan Fesenko</i> 'Arithmetical invariants (ramification theory) of infinite Galois extensions of local fields'.
11.00 a.m. - 11.40 a.m.	Coffee break
11.40 a.m. - 12.30 p.m.	Lie theory <i>Efim Zelmanov</i> "The Burnside Problem: one problem or many?"
12.30 p.m. - 2.10 p.m.	Lunch break
2.10 p.m. - 3.00 p.m.	Subgroup growth and zeta functions <i>Alex Lubotzky</i> II
3.00 p.m. - 3.40 p.m.	Tea
3.40 p.m. - 4.30 p.m.	Probabilistic Aspects <i>Laci Pyber</i> "Maximal subgroup growth"
4.40 p.m. - 5.30 p.m.	Trees <i>Pavel Zalesskii</i> "Virtually free pro-p groups"
6.15 p.m. - 7.00 p.m.	Problem Session III (Grey College).

Saturday, 19th July

Day trip to Hadrian's Wall

Sunday, 20th July

9.10 a.m. - 10.00 a.m.	<i>Alex Lubotzky</i> III
10.10 a.m. - 11.00 a.m.	<i>Hyman Bass</i> "The pro-algebraic completion of rigid groups"
11.00 a.m. - 11.40 a.m.	Coffee break
11.40 a.m. - 12.30 p.m.	<i>Narain Gupta</i> "Solution of the dimension subgroup problem"
12.30 p.m. - 2.00 p.m.	Lunch break
2.00 p.m. - 2.30 p.m.	<i>Gundel Klaas</i> "On pro-p groups and presentations"
2.40 p.m. - 3.30 p.m.	<i>George Glauberman</i> - title to be announced
3.30 p.m. - 4.00 p.m.	Tea
4.00 p.m. - 4.30 p.m.	<i>Avinoam Mann</i>
4.30 p.m. - 5.00 p.m.	<i>Levente Levai</i> "Identities in Λ -standard groups"
5.10 p.m. - 6.00 p.m.	<i>Vladimir Remeslennikov</i> "Algebraic Geometry in groups"

Monday, 21st July

9.10 a.m. - 10.00 a.m.	Structure and classification of Pro-p groups <i>Rachel Camina</i> "The Nottingham group"
10.10 a.m. - 11.00 a.m.	Number Theory <i>Shankar Sen</i> "p-adic Galois Representations and their Invariants 1. Generalised Hodge-Tate Decompositions"
11.00 a.m. - 11.40 p.m.	Coffee break
11.40 a.m. - 12.30 p.m.	Subgroup growth and zeta functions <i>Aner Shalev</i> "Subgroup growth and number theory"
12.30 p.m. - 2.00 p.m.	Lunch break

Monday, 21st July (continued)

- 2.00 p.m. - 2.30 p.m. Lie theory
Consuelo Martinez "The exponent of finite groups and nearly-Engel Lie algebras"
- 2.30 p.m. - 3.00 p.m. Lie Theory
Pavel Shumyatsky "Local finiteness of some groups with small centralisers"
- 3.30 p.m. - 4.00 p.m. Tea
- 3.30 p.m. - 4.00 p.m. Probabilistic aspects
Aner Shalev "Hausdorff dimension in pro-p groups"
- 4.00 p.m. - 4.30 p.m. *Yiftach Barnea* "Random generation in pro-p groups"
- 4.40 p.m. - 5.30 p.m. Contributed talks
Thomas Weigel "Powerful p-central groups and Poincare duality"
- 6.15 p.m. - 7.00 p.m. Problem Session IV (Grey College).

Tuesday, 22nd July

- 9.00 a.m. - 9.30 a.m. Structure and classification of Pro-p groups
Andrea Caranti "The Lie algebra of the Nottingham group"
- 9.30 a.m. - 10.00 a.m. *Péter Pálffy* "Conjugacy classes and characters of some finite quotients of the Nottingham group"
- 10.10 a.m. - 11.00 a.m. Number Theory
Shankar Sen "P-adic Galois Reps. and their Invariants
2. Ramification in p-adic Lie Extensions"
- 11.00 a.m. - 11.40 a.m. Coffee break
- 11.40 a.m. - 12.30 p.m. Subgroup growth and zeta functions
Marcus du Sautoy "Zeta functions: functional equations and uniformity"
- 12.30 p.m. - 2.00 p.m. Lunch break
- 2.00 p.m. - 2.30 p.m. Lie theory
Evgeni Khukhro "An application of the Malcev correspondence to finite p-groups"

Tuesday, 22nd July (continued)

2.30 p.m. - 3.00 p.m.

Lie Theory

Yuri Medvedev "Groups satisfying positive laws, nilpotent-by-burnside varieties, Engel groups"

3.15 p.m.

Depart Maths Department for Durham Cathedral (a guided tour of the Cathedral will be provided) to arrive at the Cathedral for 3.45 p.m.

7.00 p.m.

Sherry Reception

7.30 p.m.

Symposium Special Dinner

Wednesday, 23rd July

9.10 a.m. - 10.00 a.m.

Structure and classification of pro-p groups

Michael Newman II "Computation in pro-p groups"

10.10 a.m. - 11.00 a.m.

Number Theory

Shankar Sen "p-adic Galois Reps. and their Invariants

3. The Lie Algebra of the Image (of a p-adic Galois rep.)"

11.00 a.m. - 11.30 a.m.

Coffee break

11.30 a.m. - 12.00 noon

Subgroup growth and zeta functions

Dan Segal "Subgroup Growth and Upper Rank"

12.00 noon - 12.30 p.m.

Marcus du Sautoy "Zeta functions and natural boundaries"

12.30 p.m. - 2.00 p.m.

Lunch break

2.00 p.m. - 2.30 p.m.

Lie theory

Jamshid Derakshan "Pro-p groups, Lie algebra methods, and graded algebra"

2.30 p.m. - 3.00 p.m.

Lie Theory

Sandro Mattarei "Graded Lie algebras of maximal class"

3.00 p.m. - 3.40 p.m.

Tea

3.40 p.m. - 4.30 p.m.

Subgroup growth

Dan Segal "Polynomial Subgroup Growth"

4.40 p.m. - 5.10 p.m.

Probabilistic aspects

Meenaxi Bhattacharjee (?)

5.10 p.m. - 5.40 p.m.

Probabilistic Aspects

Nigel Boston

6.15 p.m. - 7.00 p.m.

Answers Session (Grey College)