CV of Nikolay Nikolov

Date of Birth: 9 July 1976
Nationality: Bulgarian
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Academic

September 2012 - University Lecturer in Pure Mathematics in association with University College, Oxford.

October 2006- August 2012 Lecturer in Pure Mathematics, Imperial College, London. (Reader from October 2009.)

October 2004-October 2007: G.H. Hardy Junior Research Fellowship, New College, Oxford.

October 2003 - June 2004: Visiting Postdoctoral Fellowship at the Tata Institute for Fundamental Research, Mumbai, India.

October 2002 - July 2003: Golda-Meir Postdoctoral fellow at the Hebrew University of Jerusalem.

October 1999 - July 2002: D Phil in Mathematics, University of Oxford. Thesis title: Power subgroups of profinite groups. Supervisor: Prof Dan Segal.

October 1995 - June 1999: BA Honours (Class I) in Mathematics, University of Oxford. Junior Mathematical Prize.

1990-1995: High School in Burgas, Bulgaria. First prizes at national and international mathematical competitions, including 3 gold and 1 silver medals at the International Mathematical Olympiads from 1992 to 1995.

Research interests:

Profinite groups, algebraic groups, finite simple groups, word values and asymptotic invariants of finite and infinite groups, expander graphs and property τ.

Conferences in the past 5 years (invited speaker)

- June 2012, The 16-th Midrasha Mathematicae: Words and growth, Jerusalem, Israel.

- 26 Feb-2 March 2012, Workshop on Invariant Random subgroups, Sde Boker, Israel.

- 4-14 July 2011, LMS Durham Symposium 'Geometry and Arithmetic of Lattices'.

- 27 June-1 July 2011, Workshop 'Groups and Additive combinatorics', Gregynogg Hall, Wales.

- 5-11 September 2010, Oberwolfach workshop 'Actions and Invariants of Residually Finite Groups: Asymptotic Methods'

- 7-10 May 2010, Cornell topology festival.

- April 2009, Focused research group on 'Groups and Dynamics', Banff International Research Station, Canada.

- 30 March-4 April, 2009, Conference 'Group Theory, Number theory and Geometry', Oxford.

- June 2008, Oberwolfach workshop 'Profinite groups'.

- May 2008, Oberwolfach workshop 'Groups and Geometries'.

- April 2008, Workshop 'The algebraic structure of profinite groups', Royal Holloway, London.

- September 2007, D. Segal's 60-th birthday conference, Levico Terme, Italy.

- August 2007, Workshop 'Groups in the Alps: profinite and residually finite groups', Seminaire Borel, La Fouly-Forclaz, Switzerland.

- May 2007, Workshop 'Totally disconnected topological groups', Blaubeuren.

- January 2007, Conference 'The Hall-Higman paper - 50 years on', Oxford.

Seminar talks in the past two years

Nottingham, Bristol, Brussels (Louvain la Neve), Cambridge, Oxford, Royal Holloway, Southampton, York.

Conferences and research meetings organized

Joint organizer for the London Algebra Colloquium at Imperial College (in the Spring and Summer term) from 2008 to date.
One day meeting 'Profinite groups as completions' Imperial College, 12 December 2011.
Workshop 'Expansion in Groups' Imperial College, 26-27 May 2010.
One day meeting 'Rank gradient of groups' Imperial College, 19 June 2009.
One day meeting 'The Nottingham group', Imperial College, December, 2007.

Future meeting:
Co-organizer (with Mikhail Ershov) of a workshop on Golod-Shafarevich groups and Rank Gradient, Schrodinger Institute, Vienna, 20-26 August 2012.

Prizes and awards

2007: Whitehead prize of the London Mathematical Society.

Teaching

- Certificate for Advanced Study in Learning and Teaching (CASLAT) Imperial College, 1 April 2010.

- First year Algebra course (Spring 2012)

- Tutor for second year undergraduates in 2011.

- Oberwolfach seminar 'Algebraic properties of profinite groups' 12-18 June 2011, a course for graduate students.

- MSc course on Commutative Algebra in 2010.

- Undergraduate courses (3-rd/4-th year level) on Group Theory 2008-2011 and Enumerative Combinatorics (3-rd/4-th year and MSC level) 2008, 2009.

- Lecture course on 'Strong approximation methods in group theory', part of a graduate LMS/EPSRC short course in Oxford, September, 2007.

Grants

EPSRC grant for workshop on 'Expansion in Groups', May, 2010.

EPSRC grant on 'Rank gradient of groups', 1 April 2011 until March 2014. Grant value: GBP 336,000.

Referee

Editorial adviser for the journals of the London Mathematical Society (from December 2011)
Referee for J. Topology, J. Algebra, J. American Mathematical Society, Inventiones Mathematicae, Annals of Mathematics and the journals of the London Mathematical Society.

PhD students

Jonathan Kiehlmann (started 2008, due to finish 2012) , Matthew Levy (started 2009, due to finish 2013)

Publications

1. M. Abért, N. Nikolov, B. Szegedy, Congruence subgroup growth of arithmetic groups in positive characteristic, *Duke Math J. 117, No. 2, 2003.*

2. N. Nikolov, D. Segal, Finite index subgroups of profinite groups, *C. R. Acad. Sci. Paris, Ser. I 337 (2003) 303-308.*

3. A. Lubotzky, N. Nikolov, Subgroup growth of lattices in semisimple Lie groups, *Acta Math., 193:3 (2004) 73-104.*

4. D. Goldfeld, A. Lubotzky, N. Nikolov, L. Pyber, Counting primes, groups and manifolds, *Proc. Nat. Acad. Sci. USA, v.101 no.37 (2004), 13428-13430.*

5. N. Nikolov, On the commutator width of perfect groups, *Bull. London Math. Soc. 36 (2004) 30-36.*

6. N. Nikolov, Finite index subgroups of positively finitely generated groups. *Bull. London Math. Soc. 37 (2005) 873-877.*

7. M. Kassabov, N. Nikolov, Universal lattices and property τ, *Inventiones Mathematicae 165, 209-224 (2006),*.

8. M. Kassabov, N. Nikolov, A. Lubotzky, Finite simple groups as expanders, *Proc. Nat. Acad. Sci. USA, v.103 no.16 (2006), 6116-6119.*

9. M. Kassabov, N. Nikolov, Cartesian products as profinite completions, *IMRN, Vol. 2006, ID 72947.*

10. N. Nikolov, A product decomposition for the classical quasisimple groups, *J. Group Theory 10 (2007), 43-53.*

11. N. Nikolov, D. Segal, On finitely generated profinite groups I, *Annals of Math. 165 (2007), 171-238.*

12. N. Nikolov, D. Segal, On finitely generated profinite groups II, *Annals of Math. 165 (2007), 239-273.*

13. N. Nikolov, D. Segal, A characterization of finite soluble groups, *Bull. London Math. Soc. 39 (2007), 209-213.*

14. N. Nikolov, D. Segal, Direct products and profinite completions, *J. Group Theory 10 (2007), 789-793..*

15. M. Kassabov, N. Nikolov, Generation of polycyclic groups, *J. Group Theory, 12 (2009), 567-577.*

16. L. Babai, N. Nikolov, L. Pyber, Product growth and mixing in finite groups, *SODA: Proceedings of the nineteenth annual ACM-SIAM symposium on Discrete algorithms San Francisco, California, 2008, 248-257.*

17. M. Liebeck, N. Nikolov, A. Shalev, Groups of Lie type as products of SL_2 subgroups. *J. Algebra, Vol. 326, 201-207, 2011.*

18. N. Nikolov, L. Pyber, Product decompositions of quasirandom groups and a Jordan type theorem, *J. European Math. Soc. Vol. 13, 2011, 1063-1077.*

19. M. Liebeck, N. Nikolov, A. Shalev, A conjecture on product decompositions of simple groups, *Groups Geom, Dynamics, Vol. 4, 799-812, 2010.*

20. N. Nikolov, 'Strong approximation methods in group theory'; in B. Klopsch, N. Nikolov, C. Voll, *Lectures on profinite topics in group theory*, CUP, 2011.

21. N. Nikolov, D. Segal, Powers in finite groups, *Groups Geom. Dynamics, Vol. 5, 501-507, 2011*

22. M Abért, N. Nikolov, A. Jaikin-Zapirain, Rank gradient from combinatorial viewpoint *Groups Geom. Dynamics, Vol. 5, 213-230, 2011.*

23. M. Liebeck, N. Nikolov, A. Shalev. Product decomposition in finite simple groups, *Bull. London Math. Soc. to appear.*

24. M. Abert, N. Bergeron, I. Biringer, T. Gelander, N. Nikolov, J. Raimbault, I. Samet, On the growth of Betti numbers of locally symmetric spaces, *Comptes Rendus Mathematique (August 2011)*

25. M. Abért, N. Nikolov, Rank gradient, cost of groups and the rank vs. Heegaard genus problem, *J. European Math. Soc. to appear.*

26. N. Nikolov, D. Segal, Generators and commutators in finite groups; abstract quotients of compact groups, *Inventiones Mathematicae*, 2012. arxiv.org/abs/1102.3037.

27. M. Kassabov, N. Nikolov, Words with few values in finite simple groups, *Q. J. Math*, 2012.

Preprints:

28. N. Nikolov, Algebraic properties of profinite groups, arxiv.org/abs/1108.5130.

29. I. Erovenko, N. Nikolov, B. Sury, Bounded generation and second bounded cohomology of wreath products, *submitted.*