

Konstantin Ardakov

Personal Details

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Date of birth: 10th November, 1979.

Nationality: British

Positions Professor of Mathematics, Mathematical Institute, University of Oxford
Tutorial Fellow, Brasenose College

Awards and distinctions

08/2014 Invited Speaker, International Congress of Mathematicians, Seoul

09/2013 - 08/2018 EPSRC Early Career Fellowship

Education

10/2000 - 05/2004 University of Cambridge
PhD in Mathematics. Smith-Knight Prize.

10/1996 - 06/2000 University of Oxford
MMath degree, 1st Class. Junior Mathematical Prize.

Professional experience

09/2013 - 08/2017 Mathematical Institute, University of Oxford
University Lecturer, then Associate Professor.

01/2012 - 08/2013 School of Mathematical Sciences, Queen Mary University of London
Reader in Pure Mathematics.

10/2007 - 12/2011 School of Mathematical Sciences, University of Nottingham
Leverhulme Early Career Fellow, then Lecturer.

10/2006 - 09/2007 Department of Pure Mathematics, University of Sheffield
Research Associate.

10/2003 - 09/2006 Christ's College, University of Cambridge
Sir Robert and Lady Clayton Junior Research Fellow.

Publications \widehat{D} -modules on rigid analytic spaces II, with S.J.Wadsley,
to appear in the Journal of Algebraic Geometry.

\widehat{D} -modules on rigid analytic spaces I, with S.J.Wadsley,
to appear in Crelle's Journal.

A canonical dimension estimate for non-split semisimple p -adic Lie groups, with C. Johansson. Representation Theory 20 (2016), 128-138.

\widehat{D} -modules on rigid analytic spaces, Proceedings of the International Congress of Mathematicians, Seoul, Volume III (2014), 1-9

Verma modules over Iwasawa algebras are faithful, with S. J. Wadsley. Münster Journal of Mathematics 7 (2014), 5-26.

Krull dimension of affinoid enveloping algebras, with I. Grojnowski. Glasgow Mathematical Journal 55A (2013), 7-26.

On irreducible representations of compact p -adic analytic groups, with S. J. Wadsley. Annals of Mathematics 178 (2013), 453-557.

Prime ideals in nilpotent Iwasawa algebras. Inventiones Mathematicae 190(2) (2012), 439-503.

The controller subgroup of one-sided ideals in completed group rings. Contemporary Mathematics 562 (2012), 11-26.

Γ -invariant ideals in Iwasawa algebras, with S. J. Wadsley. Journal of Pure and Applied Algebra 213 (2009), 1852-1864.

Centres of skewfields and completely faithful Iwasawa modules. Journal of the Institute of Mathematics of Jussieu 7 (2008), 457-468.

On the Cartan map for crossed products and Hopf-Galois extensions, with S. J. Wadsley. Algebras and Representation Theory (2008), 33-41.

K_0 and the dimension filtration for p -torsion Iwasawa modules, with S. J. Wadsley. Proc. Lond. Math. Soc. 97(1) (2008), 31-59.

Non-existence of reflexive ideals in Iwasawa algebras of Chevalley type, with F. Wei and J. J. Zhang. Journal of Algebra 320(1) (2008), 259-275.

Reflexive ideals in Iwasawa algebras, with F. Wei and J. J. Zhang. Advances in Mathematics 218 (2008), 865-901.

Primeness, semiprimeness and localisation in Iwasawa algebras, with K. A. Brown. Trans. Amer. Math. Soc. 359 (2007), 1499-1515.

Ring-theoretic properties of Iwasawa algebras: a survey, with K. A. Brown. Documenta Mathematica Extra Volume Coates (2006), 7-33.

Localisation at augmentation ideals in Iwasawa algebras, Glasgow Mathematical Journal 48(2) (2006), 251-267.

Characteristic elements for p -torsion Iwasawa modules, with S. J. Wadsley. Journal of Algebraic Geometry 15 (2006), 339-377.

Prime ideals in noncommutative Iwasawa algebras. Math. Proc. Camb. Phil. Soc. 141(2) (2006), 197-203.

The centre of completed group algebras of pro- p groups. Documenta Mathematica 9 (2004), 599-606.

Krull dimension of Iwasawa algebras.
Journal of Algebra 280 (2004), 190-206.

Krull dimension of Iwasawa algebras and some related topics.
PhD Thesis, University of Cambridge (2004).

Preprints

Equivariant \mathcal{D} -modules on rigid analytic spaces, 132 pages

Bounded linear endomorphisms of rigid analytic functions,
with Oren Ben-Bassat, 21 pages

Talks given at Conferences and Workshops

- 03/2017 *p*-adic Analytic Geometry and Differential Equations
CIRM, Luminy, France
- 09/2016 Geometric Representation Theory and Beyond
Clay Research Conference, Oxford, UK
- 09/2015 \mathcal{D} -modules and singularities
Padova, Italy
- 05/2015 Enveloping Algebras and Geometric Representation Theory
Oberwolfach, Germany
- 11/2014 Categorical Structures in Harmonic Analysis
MSRI, Berkeley, USA
- 09/2014 Algebraic Lie Theory and Representation Theory
ICMS, Edinburgh
- 08/2014 International Congress of Mathematicians
Seoul, South Korea
- 03/2014 Workshop on modular Iwahori-Hecke algebras
Humboldt University, Berlin, Germany
- 04/2013 Interactions between Noncommutative Algebra, Representation Theory,
and Algebraic Geometry, MSRI, Berkeley, USA
- 04/2013 Iwasawa Theory and Galois Representations
University of Warwick
- 03/2013 Morning Speaker at the British Mathematical Colloquium
University of Sheffield
- 03/2013 Applications of Iwasawa Algebras
Banff Research Station, Canada
- 01/2013 Iwasawa Theory, Representations and the *p*-adic Langlands program
University of Münster, Germany
- 11/2012 New Trends in Noncommutative Algebra and Algebraic Geometry
Banff Research Station, Canada
- 04/2012 Workshop on the *p*-adic Langlands program
Fields Institute, Canada

09/2011	Noncommutative Algebraic Geometry Shanghai Workshop Fudan University, Shanghai, China
08/2011	ELGA Workshop on Arithmetical Algebraic Geometry Universidad Nacional de Córdoba, Argentina
06/2011	New developments in noncommutative algebra and its applications Sabhal Mòr Ostaig, Isle of Skye
06/2011	South England Profinite Groups meeting on Iwasawa Algebras University of Cambridge
04/2011	Instructional workshop on the noncommutative main conjectures University of Münster, Germany
08/2010	New Trends in Noncommutative Algebra University of Washington, USA
07/2010	Iwasawa 2010 Conference Fields Institute, Canada
06/2010	Kent Algebra Days University of Kent in Canterbury
12/2009	Non-abelian Fundamental Groups in Arithmetic Geometry: Final Workshop. Isaac Newton Institute, Cambridge
09/2009	Noncommutative algebra and Iwasawa theory ICMS, Edinburgh

Colloquium talks

03/2015	Warwick
05/2016	Heidelberg

Workshop organisation

12/2017	<i>D-modules, geometric representation theory and arithmetic applications</i> Clay Mathematics Institute Workshop, Oxford
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Grants awarded

2013-2018	<i>Geometrisation of p-adic representations of p-adic Lie groups.</i> Early Career Fellowship from the EPSRC. Total value: £787972.
2007-2009	<i>Algebraic structure of Iwasawa algebras.</i> Early Career Fellowship from the Leverhulme Trust. Total value: £55000.

PhD students

Ben Lewis, Queen Mary University of London (2010-2014).
Primitive factor rings of p -adic completions of enveloping algebras as arithmetic differential operators.

Billy Woods, University of Oxford (2012-2016).
Virtually nilpotent Iwasawa algebras are catenary.

Richard Mathers (2015-), Adam Jones (2016-), Joshua Ciappara (2016-), Ioan Stanciu (2016-)

Teaching

- Oxford *Noncommutative Rings*, 2015-2017, Part C lecture course.
Iwasawa algebras, 2016. Graduate lecture course for the TCC.
2013-present: undergraduate tutorials for 1st and 2nd years at Brasenose.
- QMUL *Introduction to Algebra*, 2012-2013.
1st year lecture course for 250 students.
- Nottingham *Group theory*, 2011. 3rd year lecture course.
Applied algebra for engineers, 2010-2011. Large 1st year service module.
Rings and modules, 2010. Examples classes for a 3rd year lecture course.
Algebraic geometry, 2009-2010. 4th year lecture course.
Algebraic number theory, 2007-2008. 4th year lecture course.
2009-2011: supervised 3rd year projects and 4th year dissertations.
2009-2011: gave regular weekly tutorials to a small group of 1st years.
- Cambridge 2000-2006: supervised undergraduates on various courses, including:
Numbers and sets, *Linear algebra*, *Groups, rings and modules*,
Galois theory, *Representation theory* and *Hilbert spaces*.
- Graduate courses *Geometric representation theory*, 2011.
14 lectures at POSTECH, Pohang, South Korea.
Noncommutative Iwasawa algebras, 2007.
12 lectures at Fudan University, Shanghai, China.
Noetherian Algebras, 2004-2005. Part III course.
- Miscellany Referee for several journals, including *Selecta*, *Amer. J. Math.*, *Bull. LMS.*,
J. Pure and Applied Algebra.
Reviewer of grant proposals for the NSA and for the EPSRC.
Reviewer for Springer Graduate Texts in Mathematics.
External examiner for a Cambridge PhD thesis.
Organised the 12th meeting of ARTIN at Sheffield in 2007.
Organised the Nottingham Number Theory Seminar in 2010.
Co-organised study groups at Nottingham on various topics.
Organised a study group for algebra PhD students at Queen Mary.

Recent seminar talks

Weizmann, Birmingham, Essen, London Algebra Colloquium
Manchester, Bristol, London Number Theory Seminar, Caen