

Anne-Sophie Kaloghiros

Research Interests

Algebraic geometry, higher dimensional birational geometry. Properties of varieties covered by rational curves, explicit birational geometry of Fano 3-folds, geometry of Calabi-Yau and hyperkähler manifolds. Interactions of birational geometry with mirror symmetry and derived categories.

Education

2003–2007	PhD in Algebraic Geometry, <i>The topology of terminal quartic 3-folds</i> Queens' College, University of Cambridge
2002–2003	Certificate of Advanced Studies in Mathematics, Part III (Distinction) Queens' College, University of Cambridge
2000–2003	Degree of the Ecole Centrale Paris
2000–2001	Licence (BA) in Pure Mathematics (Honours) Université d'Orsay, Paris XI
1998–2000	Classes Préparatoires Mathématiques supérieures et spéciales Lycée Joffre, Montpellier

Employment

Sep 2014–present	Lecturer in Mathematics at Brunel University London
Mar 2014–Aug 2014	Research Associate at Imperial College London
Mar 2011–Mar 2014	EPSRC Postdoctoral Fellow Project: <i>Birational Geometry and Topology of Singular Fano 3-folds</i> Jan 2012–Mar 2014: Research Associate at Imperial College London Aug 2011–Dec 2011: Visiting Scholar at the University of Illinois at Chicago Mar 2011–Dec 2011: Postdoctoral Fellow at the University of Cambridge
Nov 2009–Apr 2010	JSPS Postdoctoral Fellow, RIMS, Kyoto, Japan
Jan 2009–May 2009	Postdoctoral Fellow, MSRI, Berkeley, USA
Oct 2007–Aug 2011	Junior Research Fellow, Trinity Hall, University of Cambridge

Research Grants

Jan 2014–Apr 2014	Hausdorff Research Institute for Mathematics Membership Junior Trimester Program in Algebraic Geometry Project: <i>Birational and Hyperkähler Geometry</i> (with D. Greb, V. Lazić and C. Xu)
2011–2014	EPSRC Postdoctoral Research Fellowship
2009–2010	<i>Birational Geometry and Topology of Singular Fano 3-folds</i> , £231,682 JSPS Short Term Visiting Fellowship. ¥2,078,500

Scholarships and studentships

- 2003–2007 Munro Studentship, Queens' College; Sims Fund Scholarship; Allen, Meek and Read Scholarship; Cambridge European Trust Scholarship
- 2003 Foundation Scholarship, Queens' College, Cambridge

Selected Invited Talks

Conferences and workshops

- *The Sarkisov program for Mori fibred Calabi–Yau pairs*
 Workshop on higher dimensional algebraic geometry, IMPA, Rio de Janeiro, Brazil, 2015 (forthcoming)
 Colloquium GRIFGA, Brescia, Italy, 2015 (forthcoming)
 British algebraic geometry conference, University of Warwick, 2014
- *Non-rigid quartic 3-folds*
 EDGE days, University of Edinburgh, 2013
 COW meeting, Loughborough University, 2014
- *Birational geometry of terminal quartic hypersurfaces*
 Higher dimensional Algebraic Geometry, Taipei, Taiwan, 2013
- *Relations in the Sarkisov program*
 Birational geometry and derived categories, Vienna, Austria, 2012
 Birational and affine geometry, Moscow, Russia, 2012
- *Geography of models*
 Workshop on moduli and birational geometry, Busan, Korea, 2012
- *The Sarkisov program*
 ANR Workshop on Birational and affine geometry, Toulouse, France, 2012
- *The Nakayama-Zariski decomposition, finite generation and the MMP*
 Computational aspects of birational geometry, Daejeon, Korea, 2011
- *The topology of singular Fano 3-folds*
 COE-COW Workshop, Tokyo, Japan, 2008
 ANR Workshop on Birational Geometry of higher dimensional varieties, Grenoble, France, 2008

Seminars

- *Relations in the Sarkisov program*, 2011–2012
 Imperial College London, Université Pierre et Marie Curie, King's College London, University of Illinois at Chicago, Stony Brook University, University of Washington at Seattle, University of Notre Dame

- *The Nakayama-Zariski decomposition, finite generation and the MMP*, 2010–2011
University of Cambridge, University of Edinburgh, University of Warwick
- *The divisor class group of Fano 3-folds and rationality questions*, 2009–2010
University of Tokyo, University of Kyoto, University of Glasgow
- *The defect of Fano 3-folds*, 2008–2009
MSRI, University of Illinois at Chicago, Freie Universität Berlin, Oxford Mathematical Institute, University of Cambridge, University of Glasgow, University of Edinburgh, University of Warwick

Teaching Experience

Teaching aimed at research students

Lecturer at the Winter school *Birational methods in hyperkähler geometry*, University of Bonn, 2014

Postgraduate teaching

Lecturer, *Algebraic Curves*, Structured Master's Course, African Institute in Mathematical Sciences (AIMS), Limbe, Cameroon, January 2015

Lecturer, *Probability theory and Stochastic calculus*, Financial Mathematics Msc course, Brunel University London, 2014–2015

Lecturer, *Hodge Theory*, Examinable Part III (Master's) course, University of Cambridge, 2010–2011

Instructor, *Differential Geometry*, Problem classes, Examinable Part III (Master's) course, University of Cambridge, 2008–2009

Postgraduate research supervision

Part III essay (Master's thesis) *Mori Dream Spaces*, T. Ducat, University of Cambridge, 2011

Undergraduate teaching

Lecturer, *Algebraic Curves*, 3rd year course, Imperial College London, 2012–2014

Instructor, *Linear Algebra*, Example Classes, 2nd year course, Queens' College, Cambridge, 2006–2007

Small-group teaching (supervising), University of Cambridge, 2003–2009

(1st year courses) *Analysis I*, *Metric and Topological Spaces* ; (2nd year courses) *Analysis II*, *Linear Algebra*, *Geometry*; (3rd year courses) *Riemann surfaces*, *Algebraic Topology*, *Differentiable manifolds*, *Number Theory*, *Galois Theory*

Professional Experience

Workshop Organisation

EDGE days, University of Edinburgh, with I. Cheltsov (Edinburgh) and H. Suess (Manchester), June 2015 (forthcoming)

Birational geometry and foliations, Hausdorff Research Institute for Mathematics, Bonn, with C. Xu (Beijing), D. Greb (Bochum) and V. Lazić (Bonn), February 2014

Seminar Organisation

Cambridge organiser for the COW seminar (Cambridge, Oxford, Warwick, Bath, and Imperial College joint seminar in Algebraic Geometry, 2008–2011

Cambridge organiser for the CALF (Junior COW seminar), 2003–2005

Referee

Proceedings of the LMS, Transactions of the AMS, Advances in Mathematics, Geometriae Dedicata, European Journal of Mathematics, Compositio Mathematica and International Mathematics Research Notices

Reviewer

Zentralblatt MATH, Mathscinet

Cambridge Admissions Interviews

Interviews and admission board decisions for Trinity Hall (2007–2010) and Sidney Sussex (2008) undergraduate mathematics

Media

Interview *La classification des formes géométriques* to French magazine *La Recherche* (N.453) about the *Fanosearch Project* on classification of higher dimensional Fano varieties (2011)

Outreach

Mathematics Subject Lead for the Higher Education Access Programme, Cambridge Residential, Teach First Foundation (2010–2011). University-level Mathematics “taster” course for Year 12 pupils

Volunteer for the Teach First foundation (2011–present). Preparation of Year 13 pupils for university admission interviews and Sixth Term Examination Paper in Mathematics

Volunteer for the Nuffield Foundation (2012–2014). Mentor in a Programme designed to support gifted students from disadvantaged backgrounds through Years 12 and 13