

Professor Jonathan Bennett BA, PhD

Professor of Mathematical Analysis

[School of Mathematics \(/schools/mathematics/index.aspx\)](/schools/mathematics/index.aspx)

Contact details

Telephone [+44 \(0\) 121 414 6579](tel:+441214146579) (tel:+44 121 414 6579)

Fax +44 (0) 121 414 3389

Email j.bennett@bham.ac.uk (mailto:j.bennett@bham.ac.uk)

School of Mathematics
Watson Building
University of Birmingham
Edgbaston
Birmingham
B15 2TT
UK



About

Jonathan is a Mathematical Analyst, specialising in Harmonic Analysis and its interactions with a variety of other branches of Mathematics.

Jonathan has numerous publications in leading international mathematical journals and has received major research grants from the EPSRC. Jonathan currently holds an ERC Starting Grant entitled Transversal Multilinear Harmonic Analysis. In 2011 Jonathan received a Whitehead Prize from the London Mathematical Society for his contributions to Geometric and Harmonic Analysis.

Qualifications

Professor in Pure Mathematics:

- PhD in Harmonic Analysis, University of Edinburgh, 1999
- BA in Mathematics, University of Oxford, 1995

Biography

Jonathan Bennett qualified with a first class BA (Hons) in Mathematics from Hertford College, Oxford in 1995. He went on to study for a PhD in Harmonic Analysis at the University of Edinburgh, followed by postdoctoral positions at the University of Edinburgh, the Universidad Autonoma de Madrid and Trinity College Dublin. Jonathan joined the School of Mathematics here at Birmingham in 2005.

Teaching

- Single Honours Mathematics (G100, G103, G141)
- Mathematics Majors: Mathematics with Business Management (G1N2); Mathematics with Engineering (J920); Mathematics with Philosophy (G1V5)
- Joint Honours Mathematics: Mathematics & Computer Science (GG14); Pure Mathematics & Computer Science (GGC4); Mathematics & Sport Science (GC17); Mathematics & Music (GW13); Mathematics & Philosophy (GV15)
- Theoretical Physics and Applied Mathematics (FG31)
- Mathematics Minors: French Studies and Mathematics (GR11); German Studies and Mathematics (GR12)
- Natural Sciences (CFG0, FCG0)

Postgraduate supervision

Jonathan is interested in supervising doctoral research students in all aspects of Euclidean Harmonic Analysis.

Research

RESEARCH THEMES

Harmonic Analysis

RESEARCH ACTIVITY

Jonathan's interests lie in multivariable Euclidean harmonic analysis and its interactions with problems in geometric analysis and combinatorics. Recently he has been investigating the scope of heat-flow methods and induction-on-scales arguments in the analysis of geometric inequalities arising in the restriction theory for the Fourier transform.

Other activities

- Editorial Adviser for the Proceedings, Journal and Bulletin of the London Mathematical Society
- Analysis Subject Editor for the Proceedings of the Edinburgh Mathematical Society
- Director of the LMS-funded "UK Harmonic Analysis and PDE Research Network"

Publications

Selected:

- Bennett, J., Carbery, A., Wright, J. (2005), A nonlinear generalisation of the Loomis-Whitney inequality and applications, *Math. Res. Lett.*, 12 (4), pp.10001-10015.
- Bennett, J., Carbery, A., Soria, F., Vargas, A. (2006), A Stein conjecture for the circle, *Math. Annalen*, 336, pp. 671-695.
- Bennett, J., Carbery, A., Tao, T. (2006), On the multilinear restriction and Kakeya conjectures, *Acta Mathematica*, 196, pp. 261-302.
- Barcelo, J.A., Bennett, J., Carbery, A., Ruiz, A., Vilela, M.C. (2007), Some special solutions of the Schroedinger equation, *Indiana Univ. Math. J.*, 56, pp. 1581-1593.
- Bennett, J., Carbery, A., Christ, M., Tao, T. (2008), The Brascamp-Lieb Inequalities: Finiteness, Structure and Extremals, *Geom. and Funct. Anal.*, 17, pp. 1343-1415.
- Bennett, J., Seeger, A. (2009), The Fourier extension operator on large spheres and related oscillatory integrals, *Proc. Lond. Math. Soc.*, 98, pp. 45-82.
- Bennett, J., Bez, N., Carbery, A. (2009), Heat-flow monotonicity related to the Hausdorff-Young inequality, *Bull. Lond. Math. Soc.*, 41, pp. 971-979.
- Bennett, J., Bez, N. (2009), Closure properties of solutions to heat inequalities, *J. Geom. Anal.*, 19, pp. 584-600.
- Bennett, J., Bez, N., Carbery, A., Hundertmark, D. (2009), Heat-flow monotonicity of Strichartz norms, *Analysis and PDE*, 2 (2), pp.147-158.
- Bennett, J., Carbery, A., Christ, M., Tao, T. (2010), On multilinear inequalities of Brascamp-Lieb type, *Math. Res. Lett.* 17, pp. 647-666.
- Bennett, J. (2010), "Heat-flow monotonicity related to some inequalities in euclidean analysis", In: *Proceedings of the 8th International Conference on Harmonic Analysis and Partial Differential Equations*, El Escorial, Spain. *Contemporary Mathematics*, 505, pp. 85-96.
- Bennett, J., Bez, N. (2010), Some nonlinear Brascamp-Lieb inequalities and applications to harmonic analysis, *Journal of Functional Analysis*, 259, pp. 2520-2556.
- Barcelo, J.A., Bennett, J., Carbery, A., Rogers, K. (2011), On the dimension of divergence sets of dispersive equations, *Mathematische Annalen*, 349, pp. 599-622.
- Bennett, J., Harrison, S. (2012), Weighted norm inequalities for oscillatory integrals with finite type phases on the line, *Advances in Mathematics*, 229, pp. 2159-2183.
- eprints: arxiv.org/find/math/1/au:+Bennett_J/0/1/0/all/0/1 (http://arxiv.org/find/math/1/au:+Bennett_J/0/1/0/all/0/1)

