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Homerton College
Cambridge, UK

- EDUCATION
- ◇ **University of Cambridge, King's College, UK.**
Ph.D, Mathematics, June 2008.
 - ◇ **University of California, Berkeley, USA.**
Master of Arts in Mathematics, June 2005 (GPA: 4.0).
 - ◇ **Norwegian University of Science and Technology, NTNU, Norway.**
Siv. Ing. in Applied Mathematics, August 2002.
Thesis title: *On the Order of Deferred Correction.* (Grade: A)
- ACADEMIC POSITIONS
- ◇ **Junior Research Fellow**
University of Cambridge, Homerton College, UK
2009-Present.
 - ◇ **von Karman Instructor**
California Institute of Technology, USA
2008-2009.
- RESEARCH INTERESTS
- Functional Analysis (applied), Operator/Spectral Theory, Compressed Sensing, Mathematical Signal Processing, Sampling Theory, Computational Harmonic Analysis, Inverse Problems, Medical Imaging, Geometric Integration, Numerical Analysis, C^* -algebras
- PUBLICATIONS
1. *Generalized Sampling, Infinite-Dimensional Compressed Sensing, and Semi-Random Sampling for Asymptotically Incoherent Dictionaries* (with B. Adcock, E. Herrholz and G. Teschke)
(submitted)
 2. *Generalized Sampling: Extensions to Frames and Ill-Posed Problems* (with B. Adcock, E. Herrholz and G. Teschke)
(submitted)
 3. *Generalized Sampling and the Stable and Accurate Reconstruction of Piecewise Analytic Functions From Their Fourier Coefficients* (with B. Adcock)
(submitted)
 4. *Sharp Bounds, Optimality and a Geometric Interpretation for Generalized Sampling in Hilbert Spaces* (with B. Adcock)
(submitted)
 5. *Generalized Sampling and Infinite-Dimensional Compressed Sensing* (with B. Adcock)
(submitted)
 6. *The Infinite Dimensional QR-Algorithm*
(submitted)
 7. *On the Computation of Spectra and Pseudospectra of Self-Adjoint and Non-Self-Adjoint Schrödinger Operators* (with C. Wong)
(submitted)

8. *Complexity Issues in Computing Spectra, Pseudospectra and Resolvents* (with O. Nevanlinna)
Banach Center Publ. (to appear) (2012)
9. *Stable Reconstructions in Hilbert Spaces and the Resolution of the Gibbs Phenomenon* (with B. Adcock)
Appl. Comput. Harmon. Anal. (to appear) (2012)
10. *A Generalized Sampling Theorem for Stable Reconstructions in Arbitrary Bases* (with B. Adcock)
J. Fourier Anal. Appl. (to appear) (2012)
11. *A Theoretical Framework for Backward Error Analysis on Manifolds*
J. Geom. Mech. 3, no. 1, 81 - 111 (2011)
12. *On the Order of Deferred Correction* (with J. Strain)
Appl. Num. Math. 61, no. 8, 961-973 (2011)
13. *On the Complexity Index, the n -pseudospectrum and Approximations of Spectra of Operators*
J. Amer. Math. Soc. 24, no. 1, 81-124 (2011)
14. *Infinite Dimensional Numerical Linear Algebra; Theory and Applications*
Proc. Roy. Soc. A. 466, no. 2124, 3539-3559 (2010)
15. *On the Approximation of Spectra of Linear Operators on Hilbert Spaces*
J. Funct. Anal. 254(8), 2092-2126 (2008)
16. *Convergence Theory for Spectral Deferred Correction Correction*, (with J. Strain)
Preprint, UC Berkeley. (2007)

PROCEEDINGS

1. *Reduced Consistency Sampling in Hilbert Spaces* (with B. Adcock)
Proceedings of the 9th International Conference on Sampling Theory and Applications

Papers are available at

<http://www.damtp.cam.ac.uk/user/na/people/Anders/>

PROFESSIONAL
ACTIVITIES

Referee

- Found. Comp. Math., - Proc. Royal. Soc. Ser. A, - J. Comp. Phys.,
- IEEE Trans. Medical Imag., - J. Oper. Theory, - IMA J. Num. Anal.,
- Appl. Num. Math., - Math. Comp., - BIT Num. Math., - Sign. Proc.,
- J. Approx. Theory

SEMINAR
TALKS

- ◇ *Generalized Sampling and Semi-Random Sampling in Infinite-Dimensional Compressed Sensing*,
 - Appl. Math. Colloq., Purdue Univ., Dec 2011.
 - Appl. Math. Colloq., Univ. of Warwick, Nov 2011.
 - Harm. Anal., Sem., Univ. of Vienna, Oct. 2011
 - Harm. Anal., Sem., Aalborg University (Denmark), Sept. 2011
- ◇ *The Solvability Complexity Index and Approximations of Spectra of Operators*,
 - Geom. and Anal. Sem., Univ. of London, Queen Mary, Sept. 2011
 - London Anal. Sem., King's College London, May 2011
- ◇ *Compressed Sensing and Generalized Sampling in Magnetic Resonance Imaging*,
 - Medical Imag. Sem., Imperial College (Hammersmith Hospital), June 2011
- ◇ *Generalized Sampling and Infinite-Dimensional Compressed Sensing*,
 - Electr. Eng. Colloq., EPFL June 2011

- London Math. Soc. Lect., Cambridge, Mar 2011
- Appl. Math. Sem., Helmholtz Zentrum Munchen, Feb 2011
- Math. Colloq., Helsinki Univ. of Tech., Nov 2010.
- ◇ *Compressed Sensing in Infinite Dimensions*,
 - Stats. Colloq., Univ. Coll. London, May 2010.
 - Appl. Math. Colloq., Caltech, April 2010.
 - Appl. Math. Colloq., Stanford, April 2010.
 - Stats Colloq., Univ. of Cambridge, Feb 2010.
 - ECOS Seminar, Univ. of Edinburgh, Feb 2010.
- ◇ *Computations with the Infinite Matrix*,
 - Appl. Math. Colloq., Durham University, March 2010.
- ◇ *Compressed Sensing in Hilbert Space*,
 - C^* -Alg. Sem., Univ. of Oslo, Dec 2009.
- ◇ *Compressed Sensing - Introduction and Further Aspects*,
 - Math. Colloq., Univ. of Oslo, Dec 2009,
 - Stats. Seminar, Univ. of Cambridge, Nov 2009.
- ◇ *Computations in Infinite Dimensions*,
 - Appl. Math. Colloq., UCLA, Jan 2009.
- ◇ *On the Complexity Index and Approximations of Spectra and Pseudospectra*,
 - Appl. Math. Colloq., Caltech, Nov 2008.
 - Math. Colloq., Univ. of Reading, April 2008.
 - Appl. Math. Sem., Heriot-Watt University, Nov 2007.
 - Math. Colloq., Univ. of Cardiff, October 2007.
- ◇ *How to Compute Spectra of Infinite Matrices*,
 - Num. Anal. Sem., Univ. of Oxford, October 2007.
- ◇ *Infinite Dimensional Numerical Linear Algebra: Theory and Applications*,
 - Appl. Math. Sem., ETH (Zurich), Nov 2007.
 - Matrix Computations Sem., UC Berkeley, April 2007.
- ◇ *On the Approximation of Spectra and Pseudospectra of Linear Operators on Hilbert Spaces*,
 - I. Newton Inst., Cambridge, May 2007.
 - Operator Alg. Sem., UC Berkeley, April 2007.
 - C^* -Alg. Sem., Univ. of Oslo, March 2007.
- ◇ *On the Approximation of Spectra of Schrödinger Operators*,
 - Math. Phys. Sem., Caltech, April 2006.
- ◇ *Operator Theory in Infinite Dimensional Numerical Linear Algebra*,
 - Operator Alg. Sem., UC Berkeley, April 2006.
- ◇ *C^* -algebras and Perturbation theory in Computational Quantum Mechanics*,
 - Centre of Mathematics for Applications, Oslo, August 2004.
- CONFERENCE TALKS ◇ *Generalized Sampling and Infinite Dimensional Compressed Sensing*,
 - Analytic and Geometric Methods in Medical Imaging, I. Newton Institute, Aug 2011
 - Spars11, Edinburgh, June 2011

- Operator Algebras and Representation Theory: Frames, Wavelets and Fractals, Oberwolfach, Mar 2011
- Sparse Representations and Efficient Sensing of Data, Schloss Dagstuhl, Feb 2011
- (Plenary speaker) Workshop on Compressed Sensing, Sparsity and Inverse Problems, TU Braunschweig, Sep 2010
- ◇ *Computational Complexity and Compressed Sensing*,
 - (Plenary speaker) Summer School on Applied Analysis 2010, TU Chemnitz, Oct 2010
- ◇ *The Complexity Index and computational spectral theory*,
 - Maths2010, Edinburgh, April 2010
- ◇ *Compressed Sensing in Infinite Dimensions*,
 - Maths2010, Edinburgh, April 2010
- ◇ *Computations with the Infinite Matrix*,
 - (Plenary speaker) Operator Theory and Applications: Perspectives and Challenges, Jurata, March 2010
 - (Plenary speaker) Wales Workshop on Analytical Computational Mathematics, Cardiff Feb 2010.
- ◇ *The Complexity Index*,
 - IWOTA, Williamsburg, July 2008.
- ◇ *Infinite Dimensional Numerical Linear Algebra: Theory and Applications*,
 - Conf. on Num. Lin. Alg. and Optimization, Birmingham, September 2007.
- ◇ *A Theoretical Framework for Backward Error Analysis on Manifolds*,
 - SciCADE, St. Malo, 2007.
 - Conf. on Geometric Integration, Castellon, September 2006.
- ◇ *C*-algebras and Geometric Integration*,
 - Workshop on Lie group methods and control theory, International Centre for Mathematical Sciences (Edinburgh), June 2004.

- FELLOWSHIPS
- ◇ Norwegian American Foundation, Andrew E. and G. Norman Wigeland Fund, 2003.
 - ◇ Norway House Foundation, 2004.
 - ◇ Cambridge Overseas Trust, 2005.
 - ◇ King's College Studentship, 2005.

- AWARDS
- ◇ Smith-Knight/Rayleigh-Knight Prize 2007
 - ◇ John Butcher Award 2007.