

Curriculum Vitae

Kasso A. Okoudjou

Department of Mathematics
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Education

Ph.D. in Mathematics August 2003
Georgia Institute of Technology
Thesis: Characterization of function spaces and boundedness properties of bilinear pseudodifferential operators through Gabor frames
Dissertation Advisor : Christopher Heil

M.S. in Electrical Engineering May 2003
Georgia Institute of Technology

Maîtrise és Sciences Mathématiques September 1996
Université Nationale du Bénin

Research Interests

Pure and Applied Harmonic analysis including time-frequency and wavelet analysis and their applications to signal processing; nonlinear PDEs.

Analysis on fractals.

Professional Experience

Associate Professor July 2010 - present
Department of Mathematics, University of Maryland, College Park

Humboldt Fellow 2010 - 2011
Institute of Mathematics, University of Osnabrück.

Assistant Professor August 2006 - June 2010
Department of Mathematics, University of Maryland, College Park

H. C. Wang Assistant Professor July 2003 - July 2006
Department of Mathematics, Cornell University

Junior Research Fellow June 2005 - July 2005
Erwin Schrödinger International Institute for Mathematical Physics, Vienna, Austria

Graduate Teaching Assistant School of Mathematics, Georgia Institute of Technology	January 2003 - July 2003
Graduate Research Assistant School of Mathematics, Georgia Institute of Technology	May 2002 - December 2002
Graduate Teaching Assistant School of Mathematics, Georgia Institute of Technology	August 2001 - April 2002
Visiting Graduate Student Numerical Harmonic Analysis Group (NuHAG), University of Vienna, Austria	May 2001 - August 2001
Graduate Teaching Assistant School of Mathematics, Georgia Institute of Technology	September 1998 - April 2001
Mathematics Instructor (for high school) Complexe Scolaire William Ponty de Porto-Novo, Bénin	October 1996 - August 1998

Refereed Journal Publications

1. Gabor analysis in weighted amalgam spaces (with K. Gröchenig, and C. Heil), *Sampl. Theory Signal Image Process.* **1** (2002), no. 3, 225–260.
2. Embeddings of some classical Banach spaces into modulation spaces, *Proc. Amer. Math. Soc.* **132** (2004), no. 6, 1639–1647.
3. Bilinear pseudodifferential operators on modulation spaces (with A. Bényi), *J. Fourier Anal. Appl.* **10** (2004), no. 3, 301–313.
4. Convolutional frames and the frame potential (with M. Fickus, B.D. Johnson and K. Kornelson), *Appl. Comput. Harmon. Anal.* **19** (2005), no. 1, 77–91.
5. A class of Fourier multipliers for modulation spaces (with A. Bényi, L. Grafakos and K. Gröchenig), *Appl. Comput. Harmon. Anal.* **19** (2005), no. 1, 131–139.
6. Weak uncertainty principles on fractals (with R. S. Strichartz), *J. Fourier Anal. Appl.* **11** (2005), no. 3, 315–331.
7. Modulation spaces and a class of bounded multilinear pseudodifferential operators (with A. Bényi, K. Gröchenig, and C. Heil), *J. Operator Theory*, **54** (2005), no. 2, 389–401.
8. Modulation spaces estimates for multilinear pseudodifferential operators (with A. Bényi), *Studia Math.*, **172** (2006), no. 2, 169–180.
9. Multilinear localization operators (with E. Cordero), *J. Math. Anal. Appl.* **325** (2007), no. 2, 1103–1116.
10. Unimodular Fourier multipliers on modulation spaces, (with A. Bényi, K. Gröchenig and L. Rogers), *J. Funct. Anal.*, **246** (2007), no. 2, 366–384.

11. Asymptotics of eigenvalue clusters for Schrödinger operators on the Sierpinski gasket (with R. S. Strichartz), *Proc. Amer. Math. Soc.* **135** (2007), no. 8, 2453-2459.
12. Time-frequency estimates for pseudodifferential operators (with A. Bényi), *Contemporary Math.*, AMS, Vol. 428 (2007), 13–22.
13. An uncertainty principle for fractals, graphs and manifolds (with L. Saloff-Coste and A. Teplyaev), *Trans. Amer. Math. Soc.* **360** (2008), no. 7, 3857-3873.
14. Frame potential and finite abelian groups, (with B. D. Johnson), *Contemporary Math.*, Vol. 464 (2008), 137–148.
15. Invertibility of the Gabor frame operator on the Wiener amalgam space, (with I. A. Krishtal), *J. Approximation Theory*, **153** (2008), no. 2, 212–224.
16. A Beurling-Helson type theorem on modulation spaces, *J. Funct. Spaces Appl.*, **7** (2009), no. 1, 33–41.
17. Generalized eigenfunctions and a Borel theorem on the Sierpinski gasket, (with L. G. Rogers and R. S. Strichartz), *Canad. Math. Bull.*, **52** (2009), no. 1, 105–116.
18. Local well-posedness of nonlinear dispersive equations on modulation spaces, (with A. Benyi), *Bull. Lond. Math. Soc.*, **41** (2009) no. 3, 549–558.
19. Szegő limit theorems on the Sierpiński gasket, (with L. G. Rogers and R. S. Strichartz), *J. Fourier Anal. Appl.*, **16**, (2010) no. 3, 434–447.
20. Dilation properties for weighted modulation spaces, (with Elena Cordero), *J. Funct. Spaces Appl.*, accepted (March 2011).
21. Minimization of the probabilistic p-frame potential, (with Martin Ehler), *J. Statist. Plann. Inference*, accepted (September 2011).
22. Multi-window Gabor frames in amalgam spaces, (with R. Balan, J. G. Christensen, I. A. Krishtal, J. L. Romero), submitted for publication (August 2011).

Conference Proceedings And Other Publications

22. Concatenating codes for improved ambiguity behavior, (with J. J. Benedetto, A. Bourouhiya, I. Konstantinidis), *Proceedings 2007 International Conference on Electromagnetics in Advanced Applications*, (ICEAA 2007), 464–467.

Talks

AMS Special Session and 4th Cornell Conference on Analysis, Probability, and Mathematical Physics on Fractals, Cornell University, Ithaca, NY, September 2011.

Colloquium, Institute of Biomathematics and Biometry, Helmholtz Center, Munich, Germany, July 2011.

Analysis Seminar, Linnaeus University, Växjö, Sweden, June 2011.

- Oberseminar in Applied Analysis, Mathematics Institute, University of Osnabrück, Osnabrück, Germany, June 2011.
- Analysis Seminar, The George Washington University, December 2010.
- New Trends in Harmonic and Complex Analysis, Jacobs University, Bremen, Germany, June 2010.
- Oberseminar in Applied Analysis, Mathematics Institute, University of Osnabrück, Osnabrück, Germany, June 2010.
- From Banach Spaces to Frame Theory and Applications, (Conference in Honor of Professor Pete Casazza's 65th Birthday), University of Maryland, College Park, MD, May 2010.
- ONR D& I 6.2 Gathering for Information Integration and Image Understanding, Alexandria, VA, May 2010.
- AMS Special Session on Optimal Frames and Operator Algebras, San Francisco, CA, January 2010.
- Spring 2009 Lecture Series, Department of Mathematics, Bowie State University, April 2009.
- 6th International Conference on Differential Equations and Dynamical Systems (Special Session on Numerical Methods for Partial Differential Equations and Applications), Morgan State University, Baltimore, May 2008.
- Classical and Modern Harmonic Analysis: from Theory to Numerical Computation, ICMS - University of Edinburgh, Scotland, April 2008.
- Colloquium, Department of Mathematics, Western Washington University, April 2008.
- Special Session on Wavelets, Frames and Multi-Scale Constructions, Baton Rouge, March 2008.
- Function Theory Study Seminar, Department of Mathematics, Kansas State University, February 2008.
- Analysis Seminar, Department of Mathematics, Kansas University, February 2008.
- Colloquium, Department of Physics and Astronomy, Howard University, January 2008.
- Workshop on Recent Advances in Operator Theory and Function Theory, Fields Institute, Toronto, Canada, January 2008.
- Technology Services Corporation, Silver Spring, MD, October 2007.
- Cornell's Summer Math Institute, Cornell University, July 2007.
- Research Experiences for Undergraduates, Smorgasbord Seminar Talk, Cornell University, July 2007.
- 2007 Von Neumann Symposium: Sparse Representation and High-Dimensional Geometry, Snowbird, UT, July 2007.

Workshop on Analysis on Graphs and Fractals, Cardiff University, Wales, May 2007.

Department of Mathematics and Computer Science, St. Mary's College of Maryland, April 2007.

Computational Analysis Seminar, Department of Mathematics, Vanderbilt University, April 2007.

Department of Mathematics and Statistics, Concordia University, Montreal, March 2007.

Colloquium, Department of Mathematics, Howard University, February 2007.

Colloquium, Department of Mathematics, Morgan State University, February 2007.

Special Session on Frames and Wavelets in Harmonic Analysis, Geometry, and Applications, Joint Math Meetings, New Orleans, LA, January, 2007.

Differential Equations and Dynamical Systems Seminar, University of Virginia, November 2006.

Blackwell-Tapia Conference, IMA, University of Minnesota, Minneapolis, MN, November 2006.

Special Session on Analysis and Probability on Fractals, AMS Regional Meeting, University of Connecticut, Storrs, October 2006.

Workshop on Current Trends in Harmonic Analysis and Its Applications: Wavelets and Frames, Department of Mathematics, University of Colorado at Boulder, May 2006.

Colloquium, Department of Mathematics, Ohio University, February 2006.

Colloquium, Department of Mathematics, University of Maryland College Park, February 2006.

Colloquium, Department of Mathematics, Pomona College, February 2006.

Colloquium, Department of Mathematics, Virginia Tech, January 2006.

Analysis Seminar, Cornell University, November 2005.

Special Session on Wavelets, Frames and Related Expansions, AMS Regional Meeting, University of Oregon, Eugene, November 2005.

Joint Wavelet Seminar, Saint Louis University and Washington University in Saint Louis, October 2005.

Workshop on Time-frequency analysis and nonstationary filtering, Banff International Research Station, Banff, September 2005.

11 th Conference for African American Researchers in the Mathematical Sciences, IPAM, UCLA, June 2005 (Invited Speaker).

Seminar at the Erwin Schrödinger Institute, Vienna, June 2005.

Workshop on Time-Frequency methods for pseudodifferential operators, Erwin Schrödinger Institute, Vienna, May 2005.

Analysis Seminar, Cornell University, February 2005.

Analysis Seminar, University of Connecticut Storrs, October 2004.

Cornell University, Research Experiences for Undergraduates, Smorgasbord Seminar Talk, July 2004.

Second International Conference on Computational Harmonic Analysis, Vanderbilt University, May 2004 (Invited).

Analysis Seminar, Cornell University, March 2003.

Special Session on Wavelets, Frames and Operator Theory, Joint Mathematics Meetings, Baltimore, MD, January 2003.

Special Session on Functional and Harmonic Analysis of Wavelets, Frames and their Applications, AMS Regional Meeting, University of Central Florida, Orlando, FL November 2002.

University of Arkansas Spring Lecture Series in Mathematical Sciences, Fayetteville, AR, April 2002.

Special Session on Frames, Wavelets and Operator Theory, AMS Regional Meeting, Georgia Institute of Technology, Atlanta, March 2002.

New Mexico Analysis Seminar, New Mexico State University, Las Cruces, February 2002.

Analysis Seminar, Georgia Institute of Technology February 2002.

Graduate Students Seminar, Georgia Institute of Technology February 2002.

SampTA 2001, University of Central Florida, Orlando, May 2001.

Analysis Seminar, Georgia Institute of Technology February 2001.

Professional Services

- Associate editor for the Journal of Pseudo-Differential Operators and Applications
- Journal Referee (last two years): Journal d'Analyse Mathématique, Journal of Functional Analysis, Journal of Fourier Analysis and Applications, Journals of the London Mathematical Society, Journal of Pseudo-Differential Operators and Applications, Applied and Computational Harmonic Analysis, Monatshefte für Mathematik, Tohoku Mathematical Journal.
- Reviewer for Jone & Bartlett Publishers; Mathematical Reviews.

Membership in Professional Societies

- American Mathematical Society (AMS).
- Society for Industrial and Applied Mathematics (SIAM).

Honors and Awards

Humboldt Research Fellowship for Experienced Researchers, 2010–2012.

RASA, Graduate School, University of Maryland, College Park, Summer 2010.

CMPS Dean's Award for Excellence in Teaching for 2009, CMPS, University of Maryland.

2008 Celebrating Excellence Outstanding Mentor Award, CMPS, University of Maryland.

Erwin Schrödinger Junior Fellowship (To visit the ESI in Vienna, from June to July 2005, with a grant-in-aid of EUR 4,400.00).

Junior Faculty Teaching Award, Department of Mathematics, Cornell University, 2004.

Georgia Tech Sigma Xi Best Ph.D. Thesis Award (one of five institute awards for 2003)

Skill

Fluent in French (native language) and English