# Curriculum Vitae

# Kasso A. Okoudjou


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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

Harmonic analysis, especially time-frequency and wavelet analysis and their applications to signal processing.

Linear and bilinear pseudodifferential operators.

Analysis on fractals.

## Professional Experience

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

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

Graduate Teaching Assistant — January 2003 - July 2003
School of Mathematics, Georgia Institute of Technology

Graduate Research Assistant — May 2002 - December 2002
School of Mathematics, Georgia Institute of Technology

Graduate Teaching Assistant August 2001 - April 2002
School of Mathematics, Georgia Institute of Technology

Visiting Graduate Student May 2001 - August 2001
Numerical Harmonic Analysis Group (NuHAG), University of Vienna, Austria (invited by Prof. Hans G. Feichtinger)

Graduate Teaching Assistant September 1998 - April 2001
School of Mathematics, Georgia Institute of Technology

Mathematics Instructor (for high school) October 1996 - August 1998
Complexe Scolaire William Ponty de Porto-Novo, Bénin

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## Publications

1. Characterization of function spaces and boundedness properties of bilinear pseudodifferential operators through Gabor frames, Ph.D. dissertation, Georgia Institute of Technology, August 2003.
2. Gabor analysis in weighted amalgam spaces (with K. Gröchenig, and C. Heil), Sampl. Theory Signal Image Process. **1** (2002), no. 3, 225–260.
3. Embeddings of some classical Banach spaces into modulation spaces, Proc. Amer. Math. Soc. **132** (2004), no. 6, 1639–1647.
4. Bilinear pseudodifferential operators on modulation spaces (with A. Bényi), J. Fourier Anal. Appl. **10** (2004), no. 3, 301–313.
5. 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.
6. A class of Fourier multipliers for modulation spaces (with A. Bény, L. Grafakos and K. Gröchenig), Appl. Comput. Harmon. Anal. **19** (2005), no. 1, 131–139.
7. Weak uncertainty principles on fractals (with R. S. Strichartz), J. Fourier Anal. Appl. **11** (2005), no. 3, 315–331.
8. 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.
9. Modulation spaces estimates for multilinear pseudodifferential operators (with A. Bényi), Studia Math., **172** (2006), no. 2, 169–180.
10. Multilinear localization operators (with E. Cordero), J. Math. Anal. Appl., accepted (2006).
11. An uncertainty principle for fractals, graphs and metric measure spaces (with A. Teplyaev), submitted, (2005).
12. Asymptotics of eigenvalue clusters for Schrödinger operators on the Sierpinski gasket (with R. S. Strichartz), submitted (2006).

13. Time-frequency estimates for pseudodifferential operators (with A. Bényi), submitted (2006).

## Talks

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

Colloquium, Ohio University, February 2006.

Colloquium, University of Maryland College Park, February 2006.

Colloquium, Pomona College, February 2006.

Colloquium, 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 (Invited)

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 (Invited).

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

University of Arkansas Spring Lecture Series in Mathematical Sciences, Fayetteville, AR, April 2002 (Contributed Talk).

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

New Mexico Analysis Seminar, New Mexico State University, Las Cruces, February 2002 (Contributed Talk).

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.

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## Other Conferences Attended

Trends in Approximation Theory & $15^{th}$ Annual Shank Lecture Series, Vanderbilt University, Nashville, Tennessee, USA, May 2000.

AMS Sectional Meeting: University of Alabama-Birmingham, November 2000.

IDR-IMA Workshop, University of Minnesota, Minneapolis, April 2001.

Summer School on Spline-Based Wavelets, Frames and Application to PDEs and Images, Technical University of Denmark, Lyngby, Denmark, August 2001.

2nd International Gabor Workshop, NuHAG, University of Vienna, Vienna, Austria, December 2001.

Concentration Week on "Frames, Wavelets and Operator Theory", Texas A& M University, College Station, TX, July 2002.

$8th$ Conference for African American Researchers in Mathematical Sciences, Princeton University, NJ, June 2002.

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## Memberships and Service

- American Mathematical Society (AMS).
- Mathematical Association of America (MAA).
- Society for Industrial and Applied Mathematics (SIAM).
- Journal Referee (last two years): Journal of Functional Analysis, Journal of Fourier Analysis and Applications, Journal of Inequalities and Applications, Proceedings of the American Mathematical Society, Sampling Theory in Signal and Image Processing, Nonlinearity, Applied and Computational Harmonic Analysis, Mathematical Reviews.
- Reviewer for Jone & Bartlett Publishers.

## Honors and Awards

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.

## Recent Teaching

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| Honors Calculus II, Cornell University | Fall 2005 |
| Honors Introduction to Analysis, Cornell University | Fall 2005 |
| Engineering Mathematics (Differential Equations), Cornell University | Spring 2005 |
| Measure Theory and Lebesgue Integration, Cornell University | Fall 2004 |
| Wavelets and Fourier Series, Cornell University | Spring 2004, 2005, 2006 |
| Calculus II for Engineers, Cornell University | Fall 2003, Spring 2004 |
| Multivariable Calculus, Georgia Institute of Technology | Summer 2003 |
| Linear Algebra for Calculus, Georgia Institute of Technology | Spring 2003 |

May, 2006