



- 1 P.G. Casazza and M.C. Lammers, *Genus  $n$  Banach Spaces*, Illinois J. Math, **43**(1999), 307-323.

### Proceedings Articles

- 3 M. C. Lammers, Alexander M. Powell, and O. Yilmaz *On quantization of finite frame expansions: sigma-delta schemes of arbitrary order*. SPIE Proceedings Vol. 6701 Wavelets XII, Dimitri Van De Ville; Vivek K. Goyal; Manos Papadakis, Editors, 670108 Date: 20 September 2007
- 2 P.G. Casazza, G. Kutyniok, and M.C. Lammers. *Duality principles, localization of frames, and Gabor theory*. SPIE Proceedings Vol. 5914 Wavelets XI, Manos Papadakis; Andrew F. Laine; Michael A. Unser, Editors, 591418 Date: 17 September 2005(peer reviewed)
- 1 P.G. Casazza and M.C. Lammers, *Classifying characteristic functions giving Weyl-Heisenberg frames*. SPIE Proceedings Vol. 4119 Wavelet Applications in Signal and Image Processing VIII, Akram Aldroubi; Andrew F. Laine; Michael A. Unser, Editors, pp.142-152 Date: 4 December 2000

### Research Presentations

- 36 March 2009, Banff International Research Station: Error Correction, Symmetry Goals and Numerical Efficiency. Title: Uncertainty in Finite Frames with application to Quantization.
- 35 May 2007, The 31st SIAM-SEAS conference Special Session "Wavelets and Frames", University of Memphis. Sigma Delta and Alternate duals.
- 34 April 2007, University of Utah: Applied Math Seminar Sigma Delta and Alternate Dual Frames for Reconstruction.
- 33 August 2006, Texas A&M University : Concentration week: Frames, Banach spaces and Signal Processing Title: Digital to Analog Conversion and frames. (Alex Powell co-Presenter)
- 32 March 2006, Banff International Research Station: Coarsely Quantized Redundant Representations of Signals, Title: Alternate dual frames for Sigma Delta Quantization.
- 31 October 2005, University of South Carolina, Analysis Seminar, Title: Frames and Alternate Duals.
- 30 September 2005, UNCW Mathematics and Statistics Seminar, Title: Analog to Digital conversion: Alternate Duals for reconstruction.
- 29 June 2005 Universit de Franche-Comt. Besancon France, Functional Analysis Seminar Title: Frames and Applications.
- 28 May 2005 International Conference "Modern Methods of Time-Frequency Analysis", Strobl Austria Title: Alternate Duals For Sigma Delta Quantization.
- 27 December 2004, University of Maryland. Harmonic Analysis Seminar. Title: Norm Bounded Canonical Duals.

- 26 May 2004, Second International Conference on Computational Harmonic Analysis, Vanderbilt University. Title: Duality Principles in Frame Theory.
- 25 February 2004, UNCW Mathematics and Statistics Seminar, Title: Uncertainty principles and Time-Frequency Analysis.
- 24 March 2003, Frames, Wavelets and Tomography Special Session at the AMS Sectional Meeting, Baton Rouge, Title: Bracket Products for Weyl-Heisenberg (Gabor) Frames.
- 23 January 2003, Wavelets, Frames and Operator Workshop University of Maryland, Title: Computing the Canonical dual with Newton's Method.
- 22 January 2003, Wavelets, Frames and Operator Theory Special Session at the AMS National Meeting, Baltimore, Title: Wilson Bases and Convolution.
- 21 October 2002, Colloquium, Western Washington University, Title: Non-orthogonal expansions and Time-Frequency analysis.
- 20 July 2002, Concentration Week on Wavelets, Frames and Operator Theory, Texas A&M University, Title: Modular Convolutions.
- 19 March 2002, Banach Space Applications Special Session at the AMS Sectional, Georgia Tech University, Title: Banach Algebras and Gabor Frames.
- 18 February 2002, New Mexico State Analysis Seminar, Title: Gabor Frames and Hilbert  $C^*$ -Modules.
- 17 January 2002, Colloquium, Western Washington University, Title: A Newton's Method for Frames.
- 16 April 2001, Industrial Mathematics Institute Seminar, University of South Carolina, Title: Gabor Algebras and Dual Frames.
- 15 March 2001, Banach Space Theory Special Session at the AMS Sectional, University of South Carolina, Title: Gabor Systems and Function-Valued Inner Products.
- 14 February 2001, Colloquium, University of Western Washington, Title: Frames, Hilbert  $C^*$ -Modules and an Application to Wireless Communications.
- 13 April 2000, Frame Seminar, University of South Carolina, Title: A Hilbert  $C^*$ -Module for Gabor Systems and Wavelets.
- 12 March 2000, Colloquium, University of St. Louis, Title: Oversampled Gabor systems.
- 11 February 2000, Frame Seminar, University of South Carolina, Title: Generalized Zak Transforms and Oversampled Gabor Systems.
- 10 October 1999, Frame Seminar, University of South Carolina, Title: Weyl-Heisenberg Frames IV: Compressing the Frame Operator.
- 9 October 1999, Frame Seminar, University of South Carolina, Title: Weyl-Heisenberg Frames III: Riesz Representation for Bracket Products.
- 8 September 1999, Frame Seminar, University of South Carolina, Title: Weyl-Heisenberg Frames II: The Bracket Product.

- 7 September 1999, Frame Seminar, University of South Carolina, Title: Weyl-Heisenberg Frames I: Introduction.
- 6 May 1999, Graduate Student Seminar, University of North Carolina - Wilmington, Title: Bases and Frames.
- 5 April 1999, Applied Analysis Seminar, University of North Carolina - Wilmington, Title: Weyl-Heisenberg Frames and Operators.
- 4 March 1998, Banach Space Theory Special Session at the AMS Sectional, Louisville, Kentucky, Title: Genus  $n$  Banach Spaces.
- 3 January 1998, Applied Analysis Seminar, University of North Carolina - Wilmington, Title: Combinatorial Applications to Banach Spaces.
- 2 October 1997, Applied Analysis Seminar, University of North Carolina - Wilmington, Title: Banach Spaces and Permutatively Equivalent Bases.
- 1 May 1997, Banach Space Seminar Talk, University of Missouri, Title: Unique Unconditional Bases.

### Other Professional Meetings Attended

- 11 May 2005, Erwin Schrödinger Institute : Modern Methods of Time-Frequency Analysis, Vienna Austria.
- 10 April 2005, The Center for Scientific Computation and Mathematical Modelling (CSCAMM), Oversampling and Coarse Quantization for Signals, University of Maryland College Park.
- 9 October, 2003, Workshop of the NSF Focused Research Group: Wavelets, Frames and operator Theory, Georgia Institute of Technology.
- 8 May, 2000, CBMS-NSF Regional Conference in Applied Mathematics, University of Missouri-St. Louis.
- 7 October 1999, AMS Sectional Meeting, University of North Carolina-Charlotte.
- 6 January 1999, AMS-MAA Joint Meeting, San Antonio, Texas.
- 5 October 1997, AMS Sectional Meeting, Georgia Institute of Technology, Atlanta, Georgia.
- 4 December 1996, Conference on Modern Banach Space Theory, Kent State University, Kent, Ohio.
- 3 February 1996, Concentration in Infinite Dimensional Convex Geometry, MSRI, Berkeley, California.
- 2 October 1996, AMS Sectional Meeting, University of Missouri, Columbia, Missouri.
- 1 May 1994, Interaction Between Functional Analysis, Harmonic Analysis, and Probability, University of Missouri, Columbia, Missouri.

### Honors and Grants

- 2005 Cahill Grant: Modern Methods of Time-Frequency Analysis, University of North Carolina at Wilmington. Award Amount: \$2,500.

- 2004 Summer Research Grant, University of North Carolina at Wilmington: Duality Principles in Frame Theory, June-August. Award Amount: \$3,000.
- 2002 Summer Research Grant, Bureau of Faculty Research, Western Washington University: Wavelet Frames, June-August. Award Amount: \$5,000.
- 1998 Recognized as one of Graham/Hewlett Halls' "Favorite Faculty" (UNCW)

### Graduate Students and Undergraduate Research

- Anna Maeser, Masters Thesis Mathematics UNCW 2009: Optimal duals for the time frequency noise shaper.
- Will Morgan, Masters Project UNCW 2008, Frames of Translates.
- Anna Maeser, Undergraduate research UNCW 2008: Day trading with Fourier. Presented: The 6<sup>th</sup> Annual Colonial Academic Alliance (CAA) Undergraduate Research Symposium. April 2008, Boston.
- Michael Zichy, Masters Thesis Mathematics UNCW 2006: Complex scheme for Sigma-Delta Quantization .
- Adam Key, Masters Thesis Mathematics UNCW 2006: Finite Frames and the Heisenberg Uncertainty Principle.
- Seth Rittenhouses, Masters Project Mathematics WWU 2003: Self-Adjoint Operators and Applications to Quantum Transport Theory.(WWU)

### Professional Membership and Service

- Member of IEEE
- Member of IEEE Signal Processing Society
- Member of IEEE Communications Society
- Referee for:
  - Advances in Computational Mathematics
  - Applied and Computational Harmonic Analysis
  - Contemporary Mathematics
  - EURASIP Journal on Applied Signal Processing Math
  - IEEE Transactions on Information Theory
  - Journal of Fourier Analysis and Application
  - Journal of Mathematical Analysis and Applications
  - Studia Mathematica
- Reviewer for the American Mathematical Society