

Onur Oktay

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RESEARCH INTERESTS

Harmonic analysis, frame theory, wavelet theory and their applications in signal and image processing.

EDUCATION

University of Maryland, College Park, Maryland USA

Ph.D., Mathematics, January 2008

M.A., Mathematics, January 2006

Koç University, Istanbul, Turkey

B.S., Mathematics, June 2002

HONOURS AND AWARDS

Koç University undergraduate full scholarship, 1997-2002.

TEACHING EXPERIENCE

Jacob University Bremen, Bremen, Germany

Instructor

August 2008 - Present

Taught undergraduate level mathematics courses.

- 120121 Engineering and Science Mathematics - Calculus and Matrix Algebra, Fall 2009.
- 110112 Natural Science Lab Unit - Numerical Software, Spring 2009.
- 100291 Perspectives of Mathematics I, Fall 2008.

University of Maryland, College Park, Maryland USA

Instructor

August 2006-December 2006

Taught undergraduate level mathematics course.

- MATH113 College Algebra with Applications, Fall 2006.

Teaching Assistant

August 2002 - May 2006

Duties at various times have included office hours, leading discussion sessions, preparing and grading exams, quizzes and homework assignments.

- MATH660 Complex Analysis I, Spring 2006.
- MATH630 Real Analysis I, Fall 2005 and Spring 2006.
- MATH463 Complex Variables for Scientists and Engineers, Spring 2005.
- MATH113 College Algebra with Applications, Fall 2004.
- MATH241 Calculus III, Spring 2004.
- MATH240 Introduction to Linear Algebra, Fall 2003.
- MATH220 Elementary Calculus I, Fall 2002 and Spring 2003.

Koç University, Istanbul, Turkey

Teaching Assistant

September 2000 - June 2002

Duties at various times have included office hours, leading discussion sessions, grading quizzes and homework assignments.

- MATH302 Real Analysis II, Spring 2002.
- MATH301 Real Analysis I, Fall 2001.
- MATH204 Differential Equations, Spring 2001 and Fall 2001.
- MATH102 Calculus II, Fall 2000.

RESEARCH EXPERIENCE	Postdoctoral Fellow School of Engineering and Science	August 2008 - Present Jacobs University Bremen
	Postdoctoral Research Associate Norbert Wiener Center	January 2008 - August 2008 University of Maryland
	Research Assistant Norbert Wiener Center	January 2007 - December 2007 University of Maryland
PUBLICATIONS	<p>“Frame Quantization Theory and Equiangular Tight Frames”, PhD Thesis, Mathematics, Univ. Maryland at College Park (2007).</p> <p>“PCM - Sigma Delta Comparison and Sparse Representation Quantization”, with J.J. Benedetto (2008). Proceeding of CISS 2008 Invited Session on Sparse Representations and Frames, Princeton, NJ, USA.</p> <p>“Complex SigmaDelta quantization algorithms for finite frames”, with J.J. Benedetto and A. Tangboondouangjit (2008). AMS Contemporary Mathematics 464, 27-51.</p> <p>“Pointwise comparison of PCM and SigmaDelta quantization”, with J.J. Benedetto (2008), submitted to Constructive Approximation.</p> <p>“GMSK Signal Compression for Technology Independent Base Stations,” with M. Dellomo, unpublished.</p> <p>“Sigma–Delta Quantization of Operators with Bounded and Bandlimited Symbols,” with F. Kraemer and G. Pfander, in preparation.</p>	
TALKS AND PRESENTATIONS	<p>“Minimization theorem for 1-bit quantization for finite frames.” Special session “Computational Methods in Harmonic Analysis and Signal Processing,” AMS 2007 Fall Western Section Meeting, Albuquerque, October 2007.</p> <p>“PCM - SigmaDelta Comparison and Sparse Representation Quantization.” Invited Session “Sparse Representations and Frames III: Quantization and Frames,” CISS 2008, Princeton, March 2008.</p> <p>“Empirical Mode Decomposition, Frames and Sparse Representation.” Computational Analysis Seminar, Jacobs University Bremen, October 2008.</p> <p>“Zauner’s Conjecture and Finite Equiangular Gabor (Weyl - Heisenberg) frames.” Computational Analysis Seminar, Jacobs University Bremen, April 2009.</p> <p>“Coarse Quantization of Bandlimited Operators.” Computational Analysis Seminar, Jacobs University Bremen, October 2009.</p>	
MISCELLANEOUS	Student Organizer, Norbert Wiener Center Seminar, University of Maryland, 2006-2007.	