Vignon S. Oussa
Department of Mathematics
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US Citizen

EDUCATION

Ph.D. in Mathematics Saint Louis University, May 2012
Dissertation: Admissibility for Quasiregular Representations of Exponential Lie Groups
Advisor: Bradley Currey
Area of specialty: Analysis

M.Sc. Mathematics Southern Illinois University of Edwardsville, August 2008
Graduated with a 4.0 GPA

B.S. Mathematics, B.S. Computer Science Greenville College, Greenville IL, May 2005, Cum Laude.

PROFESSIONAL EXPERIENCE

2012 – Present Bridgewater State University, Bridgewater, Massachusetts.

Assistant Professor of Mathematics.

AWARDS GRANTS AND HONORS

2013 – 2014 Bridgewater State University, CARS Travel Grant.

2012 – 2013 Bridgewater State University, CARS Summer Grant.

2012 – 2013 Bridgewater State University, CARS Travel Grant.

2007 – 2008 Southern Illinois University of Edwardsville, Matthew Samsel Graduate Fellowship in Mathematics (best graduate student award).

2006 – 2007 Southern Illinois University of Edwardsville, R.N. Pendergrass Graduate Student Award (best graduate student award).

2001 – 2002 Greenville College, Freshman Mathematics Award at Greenville College.

1998 – 1999 Cotonou, Benin, Highest score at the regional mathematics competition (all high-schools in the region of Atlantique and Oueme).

2001 – 2004 Cotonou, Benin, Governmental scholarship for the best scores at the national exam of BAC. Amount awarded: $50,000 used to fund undergraduate studies.

1995 – 1996 Cotonou, Benin, National highest grade at the Brevet d'Etudes du Premier Cycle (BEPC).

TEACHING EXPERIENCE

Bridgewater State University Bridgewater, MA

Advanced Linear Algebra, (Directed Study) Fall 2014.

An Introduction to Representation Theory (Directed Study), Spring 2014.

Elements of Calculus II, Spring 2014.

Abstract Algebra, Fall 2013.

Introduction to Frame Theory, Fall 2013.

Transition to Advanced Mathematics, Fall 2012, Fall 2013, Spring 2014.

Introduction to Real Analysis, Spring 2013.

Foundations of Modern Geometry, Fall 2012, Spring 2013, Fall 2013, Spring 2014.

Selected Topics in Mathematics, Fall 2012, Spring 2013.

Southwestern Illinois College at Belleville Belleville, IL.

Multivariable Calculus, Summer 2011, Spring 2014.

Calculus II, Fall 2011, Summer 2012.

Calculus I, Summer 2010.

Intermediate Algebra, Summer 2010, Spring 2009, Summer 2011.

College Algebra, Spring 2009, Fall 2010, Fall 2011.

Basic Algebra, Fall and Spring 2008, 2009, 2010, 2011.

Saint Louis University Saint Louis, MO.

Precalculus, Fall 2010, Spring 2011, Fall 2011, Spring 2013.

Business Calculus, Fall 2009, Summer 2009, Summer 2012.

College Algebra, Spring 2009, Summer 2011.

Southern Illinois University of Edwardsville Edwardsville, IL.

College Algebra, Summer 2008.

Calculus I, II, III labs, Fall 2006 - Spring 2008.

UNDERGRADUATE MENTORING

Summer 2014 Mentoring Adrian Tinsley Program Summer Research.

Spring 2013 Supervised an honor study in Foundations of Modern Geometry.

Fall 2013 Directed an honor undergraduate thesis.

PUBLICATIONS

D. Arnal, B. Currey, V. Oussa Characterization for Regularity for a Connected Abelian Action, preprint, (2014).

V. Oussa Sampling and Interpolation on Some Nilpotent Lie Groups, to appear in Forum Math, (2014).

B. Currey, A. Mayeli, V.Oussa Decompositions of Generalized Wavelet Representations, to appear in Contemporary Math, American Mathematical Society (2014).

V. Oussa Sinc Type Functions on a Class of Nilpotent Lie groups, Advances in Pure and Applied Mathematics, Volume 5, Issue 1, Pages 519 (2014).

V. Oussa Computing Vergne Polarizing Subalgebras, to appear in Linear and Multilinear Algebra (2013).

B. Currey, A. Mayeli, V.Oussa Shift-Invariant Spaces on SI/Z Lie groups, Journal of Fourier Analysis and Applications, April 2014, Volume 20, Issue 2, pp 384-400.

A. Mayeli, V. Oussa Regular Representations of Time-Frequency Groups, Math. Nachr. 287, No. 11-12, 1320-1340 (2014).

V. Oussa Admissibility For Quasiregular Representations of Exponential Solvable Lie Groups, Colloquium Math, vol. 131, No. 2 (2013).

D. Arnal, B. Currey, B. Dali, V. Oussa Regularity of Abelian Linear Actions, Contemporary Math, American Mathematical Society 2013; 195 pp; Volume: 603.

V. Oussa Shannon-Like Wavelet Frames on a Class of Nilpotent Lie Groups, Int. Jour. of Pure and Applied Mathematics, vol. 84, No. 4 (2013).

D. Ferrone, V. Oussa Linear Independence of a Finite Set of Dilations by a One-Parameter Matrix Lie Group, Int. Jour. of Pure and Applied Mathematics, vol. 84, No. 2 (2013).

V. Oussa Bandlimited Spaces on Some 2-step Nilpotent Lie Groups With One Parseval Frame Generator, to appear in Rocky Mountain Journal (2012).

B. Currey, V. Oussa Admissibility for Monomial Representations of Exponential Lie Groups, Journal of Lie Theory 22 (2012), No. 2, 481487.

V. Oussa Decomposition of a Quasiregular Representation of Exponential Solvable Lie Groups and Admissibility, Ph.D. thesis, Saint Louis University, (2012).

U. Ledzewicz, V. Oussa, H. Schaettler Optimal Solutions of a Model of Tumor Anti-Angiogenesis With a Penalty on the Cost of Treatment, Applicationes Mathematicae, 36 (3), (2009), pp. 295-312.

U. Ledzewicz, V. Oussa, H. Schaettler Model for Cancer Therapy with Penalty on the Cost of Treatment, International Journal of Pure and Applied Mathematics, 54 (1), (2009), pp. 1-6.

RESEARCH PRESENTATIONS

Sinc-Type Functions on Some Nilpotent Lie Groups. Mathematics Colloquium at Universite the Bourgogne, June 2014. (30 min.)

On Common Connected Fundamental Domains of Lattices of the Same Volume. Mathematics Colloquium at Bridgewater State University, March 2013. (60 min.)

An Abstract Harmonic Analysis Approach to Gabor Theory. University of Maryland Baltimore County, March 2014. (20 min.)

The Orbit Method and Its Applications. Mathematics Colloquium at Dalhousie University, Halifax NS, Canada, June 2013. (60 min.)

Continuous Wavelets on Nilpotent Lie Groups. The Functional Analytic and Representation Theoretic Foundations of Wavelet Theory, Dalhousie University, June 2013. (20 min.)

Shannon-like Wavelets on Unipotent Matrices. University of Colorado Boulder, Boulder, CO, April 2013. (20 min.)

Modern Mathematical Tools in Data Transmission. New Faculty Research Forum, Bridgewater State University, April 2013. (30 min.)

Sampling and Interpolation on Some Nilpotent Lie Groups. Virginia Tech, March 2013. (20 min.)

Sinc Functions on the Heisenberg Group. MAA Talk, November 2012. (15 min.)

Homogeneous Linear Dilation Equations. Seminar Talk at Bridgewater State University, November 2012. (60 min.)

Origami, Origami Night a Math Club Event. Math Club Event, November 2012.

Decomposition of a Quasiregular Representation. PhD dissertation defense, March 2012. (60 min.)

Concepts of Admissibility and Continuous Wavelets. Analysis Seminars, March 2012. (60 min for each talk.)

Construction of Tight Frames on Nilpotent Lie Groups. AMS Joint Meeting, Boston, MA, January 2012. (15 min.)

Admissibility of Quasiregular Representations. Saint Louis, MO, February 2011. (60 min.)

Wavelets From a Representation Theory Viewpoint. Southern Illinois University, Edwardsville, IL, October 2011. (60 min.)

SCIENTIFIC VISITS

August 2012 Visited the Mathematics Department of University of Bourgogne, France.

May 2013 Visited the Mathematics Department of CUNY, New York, NY.

June 2013 Visited the Departement of Mathematics, Halifax NS, Canada.

June 2014 Visited the Mathematics Department of University of Bourgogne, France.

PROFESSIONAL ACTIVITIES AND SERVICE

Coordinator of Elements of Calculus I and Elements of Calculus II.

Serving in the Mathematics Assessment Committee at Bridgewater State University.

Coordinator of Math 180 (Transition to Advanced Mathematics) Spring 2013.

Advisor of African Student Association of Bridgewater State University.

Coordinator of internship and job opportunities for math majors, Fall 2012, Spring 2013, Fall 2013, Spring 2014.

Served in the Math Undergraduate Curriculum Committee (MUCC), Fall 2012, Spring 2013.

Served in of the Undergraduate Curriculum Committee (UCC), Spring 2013.

Co-adviser of the Math Club, Fall 2012, Spring 2013.

Co-organizer of the 2013 Canadian Mathematical Society Summer Meeting, June 2013.

Author of Reviews of Math Articles for the Mathematical Reviews database Zentralblatt.

Author of Reviews of Math Articles for MathSciNet - American Mathematical Society