

Curriculum Vitae

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Education

- **Ph.D. in Mathematics**, The University of Iowa, July 2005.
Thesis Advisor: Professor Florin Radulescu.
Thesis Title: "Amenability Properties of the Von Neumann Algebras Associated with the Generalized Thompson Group".
- **M.S. in Mathematics**, The University of Bucharest, Romania, June 1998. Specialization: Real and Complex Analysis.
- **B.S. in Mathematics and Computer Science**, The University of Transylvania, Romania, June 1997.

Research Interests

Operator Algebras, Functional and Harmonic Analysis of Wavelets and Frames, Geometric Group Theory.

Publications and Preprints

- "Representations of Thompson's Group F in $L^2(\mathbf{R}^n)$ " (with M.Brin and D.Dutkay), in preparation.
- "New Presentations of Thompson's Groups and Applications" (with U. Haagerup), to appear in Journal of Operator Theory.
- "Parseval Frames for ICC Groups", (with D.Dutkay and D.Han), to appear in Journal of Functional Analysis.
- "Unitary Representations of Wavelet Groups and Encodings of Iterated Function Systems in Solenoids", (with D.Dutkay and P.Jorgensen), to appear in *Ergodic Theory and Dynamical Systems*.
- "Orthonormal Dilations of Parseval Wavelets", (with D.Dutkay, D.Han and Q.Sun), *Mathematische Annalen*, 341(2008), pp.483-515.
- "The Inner Amenability of the Generalized Thompson Group", *Proc. Amer. Math. Soc.* 134 (2006), no. 7, pp.1995-2002.

- "The Von Neumann Algebra of the Canonical Equivalence Relation of the Thompson Group" (with D. Dutkay), *Operator theory 20*, pp.81–91, Theta Ser. Adv. Math., 6, *Theta, Bucharest*, 2006., math.OA/040333.
- "C* Estimates for Averaging Sums of Elements in the Thompson Group F", (with I.Chifan), *Perspectives in Operator Algebras and Mathematical Physics*, Bucharest, August 10-17, 2005, *Theta Series in Advanced Mathematics 8*, pp.41-51.
- "MRA Superwavelets" (with S. Bildea and D. Dutkay), *New York Journal of Mathematics*, 11 (2005) pp.1-19.

Professional Experience

- Riley Visiting Assistant Professor, Department of Mathematical Sciences, Binghamton University (SUNY), 2006-present.
- Postdoctorate position in the Department of Mathematics and Computer Science (IMADA), University of Southern Denmark, Odense, Denmark, 2005- 2006.
- Teaching/Research Assistant in the Department of Mathematics University of Iowa, Iowa City , 1999-2005.

Teaching Experience

- Binghamton University: Calculus I, Multivariable Calculus, Real Analysis II, Ordinary Differential Equations, Partial Differential Equations, Complex Analysis (graduate course).
- University of Southern Denmark: Analysis II.
- The University of Iowa: Elementary Functions, Calculus I, Calculus II, Multivariable Calculus (with Mathematica software), Fundamental Properties of Spaces of Functions I, General Topology, Comprehensive Exam Preparation Seminar-Analysis (for graduate students).

Other:

- Two courses in pedagogy at The University of Transylvania + 120 hours of pedagogical training (teaching at several top high schools in Brasov, Romania).
- Teaching Assistant for one year in the Department of Mathematics at The University of Transylvania: Discussion Sections for Multivariable Calculus and Probability Theory.

Selected Invited Talks

- *Orthonormal Dilations of Parseval Frames*, University of British Columbia and the Pacific Institute for the Mathematical Sciences, Vancouver, Canada, October, 2008 AMS Fall Western Section Meeting.
- *Representations of Thompson's Group F in $L^2(\mathbf{R}^n)$* , Great Plains Operator Theory Symposium, University Of Cincinnati, Cincinnati, June, 2008.
- *Orthonormal Dilations of Parseval Wavelets* SIAM-SEAS 2008, Special session on Wavelets and Sampling, University of Central Florida, March 2008.
- *New Presentations of Thompson's groups and Some Consequences*, Great Plains Operator Theory Symposium, University Of Nebraska, Lincoln, May, 2007.
- *Some Properties of Exact Groups*, Topology and Geometric Group Theory Seminar, Cornell University, February 2007.
- *Exact Groups*, Analysis Seminar, University of Central Florida, April 2007.
- *(Non)Amenability from the operator algebras point of view: an application to Thompson's groups $F(p)$* , Geometry and Topology Seminar, Binghamton University, September 2006.
- *The Cost of a Group*, Operator Algebra Seminar, University of Southern Denmark, October 2005.
- *C^* Estimates for Averaging Sums of Elements in the Thompson Group F* , 6th Operator Algebras International Conference, IMAR, Bucharest, Romania, August 10-17, 2005.
- *C^* Estimates for Averaging Sums of Elements in the Thompson Group F* , Great Plains Operator Theory Symposium, University of Central Florida, June 2005.
- *On the Richard Thompson Group F* , Heartland Partnership grad. student visitor, Truman State University, February 24, 2005.
- *The Von Neumann Algebra of the Canonical Equivalence Relation of the Thompson Group*, 20th International Conference on Operator Theory, Timisoara, Romania, June 30-July 5, 2004.

- *The Von Neumann Algebra of the Canonical Equivalence Relation of the Thompson Group*, Geometric Group Theory, Random Walks and Harmonic Analysis, Cortona, Italy, June 13-18, 2004.
- *The Von Neumann Algebra of the Canonical Equivalence Relation of the Thompson Group*, The 24th Annual Great Plains Operator Theory Symposium, Texas A&M University, May 26-30, 2004.
- *Groups with Relative Property T. The proof of Y. Shalom*, Seminar under the guidance of prof. F. Radulescu, 2003.

Other Conferences/Workshops Attended

- The Fifth East Coast Operator Algebras Symposium, Wellesley College, September 29-30, 2007.
- Operator Algebras and Applications, University of Southern Denmark, April 19-23, 2006.
- Workshop on Wavelets (a mathematical conference in connection with Washington University sesquicentennial celebrations), Washington University in St. Louis, March 15-19, 2004.
- Operator Algebras and Mathematical Physics Conference, Sinaia, Romania, June 2003.
- Iowa-Nebraska Functional Analysis Seminar, April 2002, October 2003.
- Wabash Modern Analysis Miniconference, Indiana Univ.-Purdue Univ. at Indianapolis, September 21-22, 2002.

Awards/Honors

- Scientific Researcher for the *Thematic Program on Operator Algebras*, Fields Institute, Toronto, Canada, November-December, 2007.
- Graduate fellowship from the University of Iowa, Summer 2004, Summer 2003, Summer 2002.
- One month research scholarship "Spazi Quantistici e Geometria Non-Commutativa", offered by the Department of Mathematics at Tor Vergata University, Rome, Italy, Summer 2003.
- Research Assistantship, University of Iowa, Spring, 2003.
- Tempus scholarship at Tor Vergata University, Rome, Italy, Spring 1998.
- First prize at the Scientific Communications Session, The University of Transylvania, Brasov, Romania, 1993, 1994, 1997.
- Second prize at the Scientific Communications Session, The University of Transylvania, Brasov, Romania, 1995.
- Participant in the National Mathematical Olympiad, 1992, Botosani, Romania.

Professional Membership

- American Mathematical Society, 1999-present.
- Mathematical Recreations Society, Romania, 2005-present.

Additional Activities and Skills

- Reviewer for *Mathematical Reviews*.
- Adviser to MAA Student Chapter/Math Club, SUNY Binghamton.
- Adviser for the 2007 and 2008 freshman summer orientation programs, SUNY Binghamton.
- Computer skills: Mathematica, Latex, Excel, Visual Basic, Windows, Unix.