Dan M. Ciubotaru

CONTACT INFORMATION

Department of Mathematics
University of Utah
LCB 106
155 S 1400 E
Salt Lake City, UT 84112

Phone: (801) 581-3133
Fax: (801) 581-4148
Email: ciubo@math.utah.edu
www.math.utah.edu/∼ciubo

ACADEMIC POSITIONS

University of Utah, Department of Mathematics, Salt Lake City.
July 2011– Associate Professor.
July 2007–June 2011. Assistant Professor.

Massachusetts Institute of Technology, Department of Mathematics, Cambridge.
July 2004–June 2007. C.L.E. Moore Instructor.

RESEARCH

Representations of real and p-adic reductive groups.

EDUCATION

Cornell University, Ithaca, NY

- Ph.D., Department of Mathematics, August 2004
- Thesis: Unitary representations of split p-adic groups
- Advisor: Prof. Dan Barbasch

Babeş-Bolyai University, Cluj, Romania

- B.S. and M.A., Department of Mathematics and Computer Science, July 1998
- Advisor: Prof. Andrei Mărcuş

AWARDS AND SUPPORT

- NSF-DMS 0968065, 07/2010–06/2013.
- NSA-AMS 081022, 01/2010–01/2012.
- Personnel – NSF DMS-0554278 "Atlas of Lie groups and representations" (summer salary).
- Personnel – NSF DMS-0532088 "Atlas of Lie groups and representations" (summer salary).
- Visiting scholar: CIRM Luminy, June 2011; Max Planck Institut Bonn, August 2011 and June 2008.
- Faculty Undergraduate Teaching Award (2011), Department of Mathematics, University of Utah.
- Graduate Student Teaching Award (2003), Department of Mathematics, Cornell University.

TEACHING

University of Utah

- Fall 2011, 6310 Modern Algebra I
- Fall 2010, 2210 Calculus III and 3210 Foundations of Analysis I
- Spring 2010, 3220 Foundations of Analysis II
- Fall 2009, 6310 Modern Algebra I and 1060 Trigonometry
- Spring 2009, 6789 Topics in Representation Theory
- Fall 2008, 2200 Discrete Mathematics
- Spring 2008, 6220 Graduate Complex Analysis
- Fall 2007, 2210 Calculus III

Massachusetts Institute of Technology

- Spring 2007, 18.100C Analysis I
- Fall 2006, 18.104 Seminar in Analysis (Applications to number theory)
- Spring 2006, 18.100C Analysis I (published by MIT OpenCourseWare)
- Fall 2005, 18.700 Linear Algebra (published by MIT OpenCourseWare)
- Spring 2005, 18.085 Mathematical Methods for Engineering I

- Fall 2004, 18.01 Calculus I (3 sections)

Cornell University

- Spring 2004, Math 192 Calculus for Engineers
- Spring 2003, Math 112 Calculus II
- Spring and Fall 2001, Math 111 Calculus I.

PAPERS

1. The unitary I-spherical dual of split p-adic F_4, *Represent. Theory* **9** (2005), 94–137.
2. Spherical unitary principal series, with D. Barbasch, *Pure Appl. Math. Q.* **1** (2005), no. 4, 755–789.
3. Unitary I-spherical representations for split p-adic E_6, *Represent. Theory* **10** (2006), 435–480.
4. Unitarizable minimal principal series of reductive groups, with D. Barbasch and A. Pantano, *Contemp. Math.*, **472**, Amer. Math. Soc., 2008, 63–136.
5. Multiplicity matrices for the affine graded Hecke algebra, *J. Algebra* **320** (2008), 3950–3983.
6. On unitary unipotent representations of p-adic groups and affine Hecke algebras with unequal parameters, *Represent. Theory* **12** (2008), 453–498.
7. Whittaker unitary dual for affine graded Hecke algebras of type E, with D. Barbasch, *Compositio Math.* **145**, issue 6 (2009), 1563–1616.
8. Tempered modules in exotic Deligne-Langlands correspondence, with S. Kato, *Adv. Math.* **226**, issue 2 (2011), 1538–1590.
9. Ramanujan bigraphs arising from p-adic $SU(3)$, with C. Ballantine, *Proc. Amer. Math. Soc.* **139** (2011), no. 6, 1939–1953.
10. Reducibility for generic unipotent standard modules, with D. Barbasch, *J. Lie Theory* **21** (2011), no. 4, 837–846.
11. Functors for unitary representations of real classical groups and affine Hecke algebras, with P. Trapa, *Adv. Math.* **227** (2011), no. 4, 1585-1611.
12. Regular orbits of symmetric subgroups on partial flag varieties, with K. Nishiyama and P. Trapa, to appear in Representation Theory, Complex Analysis, and Integral Geometry, vol. 2, *Progress in Mathematics*, Birkhäuser, 20 pages.
13. Duality for $GL(n, R)$, $GL(n, Q_p)$, and the degenerate affine Hecke algebra for $gl(n)$, with P. Trapa, `arXiv:0903.1043`, to appear in *Amer. J. Math.*, 22 pages.
14. Spin representations of Weyl groups and Springer's correspondence, `arXiv:10061705`, to appear in *J. Reine Angew. Math.*, 21 pages.
15. On characters and formal degrees for classical affine Hecke algebras, with M. Kato and S. Kato, *Invent. Math.*, doi 10.1007/s00222-011-0338-3, 47 pages.
16. The Dirac operator for graded affine Hecke algebras, with D. Barbasch and P. Trapa, 22 pages, `arXiv:1006.1801`, submitted, December 2010.
17. Unitary equivalences for reductive p-adic groups, with D. Barbasch, 30 pages, `arXiv:0909.5241`, submitted, April 2011.
18. Characters of Springer representations on elliptic conjugacy classes, with P. Trapa, 15 pages, preprint, `arXiv:1105.4113`.

SELECTED TALKS

Conferences, workshops

- Double Affine Hecke Algebras and the Langlands Program, CIRM Luminy, June 2011.
- International Workshop on Representation Theory and Harmonic Analysis, Nankai University, Tianjin, China, June 2011.
- Workshop on structure and representations of exceptional groups, Banff, Canada, July 2010.
- Representations des groupes reductifs p-adiques, Ile de Porquerolles, France, June 2010.
- Special session on Hecke algebras and deformations on geometry and topology, A.M.S. Sectional Meeting, St. Paul, MN, April 2010.
- Workshop on nilpotent orbits and representation theory, Hokkaido University, Sapporo, February 2010.
- Special session on Lie groups and automorphic forms, Canadian Mathematical Society winter meeting, Windsor, ON, December 2009.
- Representation theory of real reductive groups, Salt Lake City, July 2009.
- Functional Analysis XI, Dubrovnik, Croatia, June 2009.
- Functional Analysis X, Dubrovnik, Croatia, July 2008.
- Atlas of Lie groups and representations I–VI, American Mathematics Institute, Palo Alto, CA, 2003–2008.
- Workshop in representation theory and geometry, Tambara seminar house, University of Tokyo, August 2007.
- 6-th Congress of Romanian mathematicians, Bucharest, June 2007.
- Special session on representation theory and the theta correspondence, A.M.S. National Meeting, New Orleans, LA, January 2007.
- Representation theory of real reductive groups, Snowbird, June 2006.
- Special session on algebraic groups, A.M.S. Sectional Meeting, Durham, NH, April 2006.
- Special session on representation theory of reductive groups, A.M.S. Sectional Meeting, Evanston, IL, October 2004.

Colloquia, Seminars

- Université Blaise Pascal, Clermont-Ferrand, France, Seminar in Pure Math, June 2011.
- University of Notre Dame, Colloquium and Lie Theory seminar, October 2010.
- Utah Representation theory seminar, September 2010, November 2008, September 2007, January 2007, April 2006.
- Kyoto University, Number Theory seminar, February 2010.
- Babeş-Bolyai University, Cluj, Romania, Algebra seminar, July 2009, June 2009.
- Idaho State University, Colloquium, February 2008.
- MIT Lie groups seminar, May 2007, May 2006, February 2005, September, October 2004.
- University of Utah, Colloquium, January 2007.
- University of British Columbia, Colloquium and Algebra seminar, January 2007.
- University of Massachusetts, Amherst, Representation theory seminar, April 2005.
- University of Maryland, College Park, Lie groups and representation theory, November 2004.
- Joint Princeton University/IAS Number Theory Seminar, March 2004.
- Rutgers University, New Brunswick, Lie Groups Seminar, October 2003.
- Cornell Lie Groups Seminar, November 2002.