

Murat Akman

Department of Mathematics, University of Connecticut

✉ murat.akman@uconn.edu

📄 <http://www.math.uconn.edu/~akman/>

Employment

- Aug 2016– **University of Connecticut, Storrs, CT.**
Evarist Giné Assistant Research Professor, Mentor: Matthew Badger
- Nov 2014–Aug 2016 **Consejo Superior de Investigaciones Científicas, Madrid, Spain.**
Postdoctoral Fellow at *Instituto de Ciencias Matemáticas*, Mentor: José María Martell

Fellowships

- Jan 2017–May 2017 **Mathematical Sciences Research Institute (MSRI), Berkeley, California.**
Postdoctoral Fellow in the *Harmonic Analysis* program, Mentor: Tatiana Toro
- Sept 2013–Dec 2013 **Institut Mittag-Leffler, Stockholm, Sweden.**
Postdoctoral Fellow in the *Evolutionary Problems* semester

Education

- May 2014 **Ph.D., Mathematics, University of Kentucky,** Adviser: John Lewis.
- May 2012 **M.S., Mathematics, University of Kentucky.**
- June 2009 **M.S., Mathematics, Middle East Technical University,** Ankara, Turkey.
- June 2006 **B.S., Mathematics, Middle East Technical University,** Ankara, Turkey.

Research Interests

Analysis of PDEs, Potential Theory, Geometric Measure Theory.

Publications

Submitted

10. **On the Brunn-Minkowski inequality for nonlinear Logarithmic capacity,** with *Olli Saari*, in preparation.
9. **The Brunn-Minkowski inequality and a Minkowski problem for nonlinear capacity,** with *Jasun Gong, Jay Hineman, John Lewis, Andrew Vogel*.
submitted, arXiv:1709.00447, 105 pages.
8. **Absolute continuity of harmonic measure for domains with lower regular boundaries,** with *Jonas Azzam and Mihalis Mourgoglou*.
submitted, 2016, arXiv: 1605.07291, 45 pages.
7. **Rectifiability, interior approximation and Harmonic Measure,** with *Simon Bortz, Steve Hofmann, and José María Martell*.
submitted, 2016, arXiv:1509.0706, 18 pages.

Published or To appear

6. **σ -finiteness of elliptic measures for quasilinear elliptic PDE in space,** with *John Lewis and Andrew Vogel*.
Advances in Mathematics, **309** (2017), 512–557.
5. **On the absolute continuity of p -harmonic measure and surface measure in Reifenberg flat domains.**
Pacific Journal of Mathematics **286-1** (2017), 25–37.

4. **Rectifiability and elliptic measures on 1-sided NTA domains with Ahlfors-David regular boundaries**, with *Matthew Badger, Steve Hofmann, and José María Martell*.
Trans. Amer. Math. Soc. **369** (2017), no. 8, 5711-5745
3. **Hausdorff dimension and σ -finiteness of p -harmonic measures in space when $p \geq n$** , with *John Lewis and Andrew Vogel*.
Nonlinear Analysis: Theory, Methods & Applications, **129**:198–216, 2015.
2. **On the dimension of a certain measure in the plane**.
Ann. Acad. Sci. Fenn. Math., **39**(2014), 187–209.
1. **On the logarithm of the minimizing integrand for certain variational problems in two dimensions**, with *John Lewis and Andrew Vogel*.
Analysis and Mathematical Physics, Volume 2, Number 1(2012), 79–88.

Talks

Plenary Talks

- October 2017 Northeastern Analysis Meeting, University of Albany
 Nov. 2017 Nonsmooth Analysis: a Workshop for Postdocs, University of Connecticut
 January 2015 Workshop on Harmonic Analysis, Partial Differential Equations and Geometric Measure Theory, ICMAT, Madrid, Spain

Seminar Talks

- Spring 2018 Analysis Seminar, University of Pennsylvania
 Oct. 2017 PDE and Differential Geometry Seminar, University of Connecticut
 May 2017 Rainwater Seminar, University of Washington
 March 2017 Harmonic Analysis Seminar, MSRI
 Dec. 2016 Analysis and PDE Seminar, Worcester Polytechnic Institute
 Nov. 2016 Analysis and PDE Seminar, University of Kentucky
 Nov. 2016 Analysis Learning Seminar
 April 2016 Seminario de Análisis y Aplicaciones, Universidad Autónoma de Madrid, Spain
 April 2016 Seminari d'edps i aplicacions, Universitat Politècnica de Catalunya, Barcelona, Spain
 April 2015 General Seminar, Mimar Sinan Arts and Fines University, Istanbul, Turkey
 Dec. 2014 Analysis and Stochastic Seminar, Uppsala University, Sweden
 Dec. 2014 HAPDEGMT working group seminar, Madrid, Spain
 Feb. 2014 Monday Analysis Seminar, Hokkaido University, Sapporo, Japan
 Nov. 2013 Evolutionary problems, Institut Mittag-Leffler, Sweden

Short/Conference Talks

- April 2018 AMS Session on Geometric Measure Theory and Partial Differential Equations, Portland State University
 April 2018 AMS Special Session on Analysis and Geometry in Non-Smooth Spaces, Northeastern University
 Sept. 2017 Northeast Analysis Network Conference, Syracuse University
 Sept. 2017 Prairie Analysis Seminar 2017, Kansas State University
 Sept. 2016 AMS Special Session on Geometric Aspects of Harmonic Analysis, Bowdoin College
 June 2016 10th International Conference on Harmonic Analysis and PDEs, El Escorial, Madrid

- June 2016 10th Conference on Harmonic Analysis and Approximation Theory, Centre de Recerca Matemàtica, Barcelona
 - April 2014 AMS Special Session on Complex Function Theory and Special Functions, Texas Tech University
 - March 2014 AMS Special Session on Complex Analysis, Probability and Metric Geometry, University of Tennessee
 - January 2014 AMS Special session on Fractal Geometry, JMM, Baltimore
 - Nov. 2013 The 72nd Midwest PDE Seminar, Purdue University
 - October 2013 AMS Special session on Interactions between Geometric and Harmonic Analysis, Washington University
 - April 2013 38th Spring Lecture Series, University of Arkansas
 - March 2013 The 3rd Ohio River Analysis Meeting, University of Cincinnati
 - January 2013 Session on GMT and Harmonic Analysis, JMM, San Diego
 - July 2012 Calculus of Variations and PDEs, Szczawnica
 - April 2012 The 2nd Ohio River Analysis Meeting, University of Kentucky
 - March 2012 AMS Special session on Complex Analysis, Geometry and Probability, University of Kansas
- Expository Talks at University of Kentucky Grad Student Seminar
- 2010-2013 The Kakeya Problem, Quasiregular mapping and p-Laplace equation, Extremal length, The Yamabe problem, Little Picard's theorem and Rickman's theorem

Poster Presentations

- August 2013 XXIInd Rolf Nevanlinna Colloquium 2013, University of Helsinki
- June 2013 CNA Summer School Topics in Nonlinear PDEs and Calculus of Variations, and Applications in Materials Science, Carnegie Mellon University
- April 2013 The 71st Midwest PDEs Seminar, University of Michigan

Scholarships and Grants

- 2014-2016 Partially supported by European Research Council grant #615112 HAPDEGMT
- 2014-2016 Partially supported by ICMAT Severo Ochoa project SEV-2015-0554
- 2012-2014 Partially supported by National Science Foundation DMS#0900291 and DMS#1265996 during PhD studies.
- 2013-2014 AMS Grad Student Travel Grant to attend JMM and sectional meetings
- Nov. 2013 IMA Travel Support to attend the Midwest PDE conference
- 2010-2013 Dissertation Enhancement Award from University of Kentucky
- 2010-2013 Summer Research Assistanship award, University of Kentucky
- 2011-2013 Graduate Student Travel Support, University of Kentucky

Teaching Experience

- Spring 2018 Partial Differential Equations at University of Connecticut
- Fall 2016-17 Differential Equations for Applications at University of Connecticut
- 2010-2013 Recitation session for Calculus I-II-III at University of Kentucky

2006-2009 Recitation session for Calculus for Mathematics Students I-II Middle East Technical University

Honors Thesis Students

Fall 2017 *David McDonald*, Senior Applied Math student at UConn

Professional Activities

April 2018 Co-organizer for the special session on “Regularity of PDEs on Rough Domains” at the AMS sectional meeting at Northeastern University

Fall 2017- Refereed Journal Articles for *Memoirs of the AMS*, *Advances in Calculus of Variations*, *Transactions of the AMS*

Fall 2016- Reviewer for Mathematical Reviews, 10 reviews as of Sept 2017

Fall 2017- Co-organizer for the Analysis Learning Seminar at University of Connecticut

Fall 2014- Organizer of the working group on Harmonic Analysis, Partial Differential Equations,
Spring 2015 and Geometric Measure Theory seminar at ICMAT

Fall 2010 Secret Seminar at University of Kentucky

References

Prof. Matthew Badger, *University of Connecticut*.

Prof. Steve Hofmann, *University of Missouri*.

Prof. John Lewis, *University of Kentucky*.

Prof. José María Martell, *Instituto de Ciencias Matemáticas*.

Prof. Tatiana Toro, *University of Washington*.

Prof. Fabiana A. Cardetti, *University of Connecticut(Teaching)*.