MARK MAGSINO

The Ohio State University ◇ Department of Mathematics
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EDUCATION

University of Maryland **May 2018**
Ph.D. in Mathematics
Advisor: John J. Benedetto

Carnegie Mellon University **May 2012**
B.S. in Mathematics & Japanese Studies

RESEARCH INTERESTS

My research area is pure and applied harmonic analysis, and in particular, I study frame theory. More specifically I study optimal line packings, compressive sensing, Gabor frames, CAZAC sequences, and their applications.

POSITIONS HELD

The Ohio State University **2018 - present**
Research Visiting Assistant Professor

MITRE Corporation **Jun - Aug 2015**
Research Intern

PUBLICATIONS

Submitted

1. M. Magsino, D.G. Mixon, H. Parshall. "Kesten-McKay law for random subensembles of Paley equiangular tight frames". *Submitted, preprint available at https://arxiv.org/abs/1905.04360.*

Journal Articles

2. M. Magsino. "Constructing Tight Gabor Frames Using CAZAC Sequences" *Sampling Theory in Signal and Image Processing*, 16:73-99, 2017.

Book Chapters

3. J.J. Benedetto, K. Cordwell, and M. Magsino. "CAZAC Sequences and Haagerup's Characterization of Cyclic N-roots". *New Trends in Applied Harmonic Analysis: Sparse Representations, Compressed Sensing, and Multifractal Analysis II.* Birkhäuser, 2019.

Conference Proceedings

4. M. Magsino, D.G. Mixon, H. Parshall. "Linear Programming bounds for cliques in Paley graphs". *SPIE Optics + Photonics 2019.*

5. M. Magsino, D.G. Mixon. "Biangular Gabor frames and Zauner's conjecture". *SPIE Optics + Photonics 2019.*

6. M. Magsino, D. G. Mixon, H. Parshall. "A Delsarte-style proof of the Bukh–Cox bound". *Sampling Theory and Applications 2019.*

INVITED TALKS AND PRESENTATIONS

- Wavelets and Sparsity XVIII **Aug 2019**
  SPIE Optics + Photonics
- Algebra, Geometry, and Combinatorics of Subspace Packings **Jul 2019**
  SIAM Conference on Applied Algebraic Geometry
- Special Session on Frame Theory **Jul 2019**
  Sampling Theory in Signal and Image Processing (SampTA)
- Special Session on Wavelets, Frames, and Related Expansions. **Apr 2018**
  AMS Spring Western Sectional Meeting
- AMS Special Session on Recent Advances in Packing. **Mar 2018**
  AMS Spring Central Sectional Meeting
- Norbert Wiener Center Seminar **Oct 2017**
  University of Maryland

TEACHING

The Ohio State University

- Math 3345: Foundations of Higher Mathematics
- Math 2415: Ordinary and Partial Differential Equations
- Math 1172: Engineering Mathematics A

University of Maryland

- Math 111: Introduction to Probability
- Math 113: College Algebra and Trigonometry
- Math 115: Precalculus
- Math 140: Calculus I
- Math 246: Introduction to and Classification of Differential Equations
- Stat 100: Elementary Probability and Statistics

Carnegie Mellon University

- 21-120: Differential and Integral Calculus
- 21-122: Integration, Differential Equations, and Approximation

MENTORSHIP

Undergraduate Research Mentorship

- Abhishek Vijaykumar. TBA **Fa 2019**
  Project on biangular Gabor frames and Zauner's conjecture

University of Maryland Directed Reading Program

- Lauren Fox. "Markov Chains and the Ergodic Theorem" **Fa 2013**
- Christopher Ostermann. "A Philosophical Enquiry of ZFC" **Sp 2016**

SERVICE AND OUTREACH

- Norbert Wiener Center Seminar Organizer **Fa 2016-Sp 2018**

- AMS Spring Central Sectional Meeting - Session Organizer **Apr 2020**
  Special Session on Optimization for Discrete Geometry
- Mentor for High School Capstone Project **2019-20**
  Nathan Richardson. Fractal Analysis and its Applications

SKILLS

Languages	English (native speaker), Japanese (advanced proficiency)
Software	LaTeX, Python, Matlab, Mathematica

Last updated: November 4, 2019