

Curriculum Vitae

- **PERSONAL INFORMATION**

Family name: Koutsogiannis
First name: Andreas
Date of birth: August 4th 1984
Nationality: Greek

- **AREAS OF RESEARCH INTEREST**

Ergodic theory
Topological dynamics
Applications to Ramsey theory and infinitary combinatorics

- **EDUCATION**

09/2008 – PhD in Pure Mathematics (Distinction)
12/2011 Department of Mathematics, University of Athens, Athens, Greece
PhD Advisor: V. Farmaki

09/2006 – Master of Science in Pure Mathematics (Grade 10/ 10 – top out of 100 students)
07/2008 Department of Mathematics, University of Athens, Athens, Greece
Master Thesis Advisor: V. Farmaki

09/2002 – Bachelor of Science in Pure Mathematics (Grade 9.61/ 10 – top out of 500 students)
09/2006 Department of Mathematics, University of Athens, Athens, Greece

- **CURRENT POSITION**

06/2021 – Associate Professor
Today Department of Mathematics, Aristotle University of Thessaloniki, Thessaloniki, Greece

- **PREVIOUS POSITIONS**

08/2017 – Lecturer
06/2021 Department of Mathematics, The Ohio State University, Columbus, Ohio, USA

08/2014 – Ross Assistant Professor
08/2017 Department of Mathematics, The Ohio State University, Columbus, Ohio, USA

09/2012 – Teaching Assistant – Research Associate
07/2014 Department of Mathematics, University of Athens, Athens, Greece

06/2011 – Short – term Research Scholar
09/2011 Department of Mathematics, University of Houston, Houston, Texas, USA

09/2007 – Teaching Assistant (during my PhD Candidacy)
10/2011 Department of Mathematics, University of Athens, Athens, Greece

- **CAREER BREAKS**

10/2011 – Completed my military obligations in Chios, Greece (8-month period), as an amphibious
06/2012 special forces soldier (Lance Corporal)

- **GRANTS**

American Institute of Mathematics, SQuaRE grant, 2021-2022.

Fully funded travel, accommodations for a small working group in additive combinatorics, ergodic theory and fractal geometry.

Research Group

- Daniel Glasscock, PhD, Assistant Professor, University of Massachusetts Lowell, USA.
- Andreas Koutsogiannis, PhD, Associate Professor, Aristotle University of Thessaloniki, Greece.
- Joel Moreira, PhD, Assistant Professor, University of Warwick, Coventry, UK.
- Florian K. Richter, PhD, Assistant Professor, École Polytechnique Fédérale de Lausanne, Switzerland.
- Donald Robertson, PhD, Neumann Fellowship in Pure Mathematics, University of Manchester, UK.
- Anh N. Le, PhD, Zassenhaus Assistant Professor, Ohio State University, USA.

- **FELLOWSHIPS**

09/2008 – Scholarship from the State Scholarships Foundation of Greece during my PhD Candidacy
12/2012 (1st place in the nationwide level exams with average 18.64/ 20)

09/2004 – Scholarship from the State Scholarships Foundation of Greece
06/2005 (one of the three best students of the academic year with average 10/ 10)

09/2003 – Scholarship from the State Scholarships Foundation of Greece
06/2004 (one of the six best students of the academic year with average 9.88/ 10)

09/2002 – Scholarship from the State Scholarships Foundation of Greece
06/2003 (one of the six best students of the academic year with average 9.11/ 10)

- **AWARDS**

09/2007 – Award from the Department of Mathematics at the University of Athens
06/2008 (best student at the Master's program of Pure Mathematics with average 10/ 10)

09/2004 – Award from the State Scholarships Foundation of Greece
06/2005 (best student of the academic year with average 10/ 10)

09/2003 – Award from the State Scholarships Foundation of Greece
06/2004 (best student of the academic year with average 9.88/ 10)

09/2002 – Award from the Pan-Hellenic Union of families with many children
06/2003 (success in the nationwide exams and acceptance to the Department of Mathematics at the University of Athens: place 25/ 400, top 3.8%)

09/2001 – Award at the nationwide contest "Euclid" organized by the Hellenic Mathematical Society
06/2002 (HMS) (3rd place, participation in the 16th Greek Mathematical Olympiad "Arhimedes")

- **SUPERVISION OF GRADUATE STUDENTS**

- SP 2021 Supervision of eight (8) short paper assignments during the graduate course 5202 (Introduction to Real Analysis II)
- SP 2020 Supervision of eight (8) short paper assignments during the graduate course 5202 (Introduction to Real Analysis II)
- SP 2019 Supervision of thirteen (13) short paper assignments during the graduate course 5202 (Introduction to Real Analysis II)
- SP 2018 Supervision of twelve (12) short paper assignments during the graduate course 5202 (Introduction to Real Analysis II)
- SP 2016 Supervision of fifteen (15) short paper assignments during the graduate course 5202 (Introduction to Real Analysis II)

- **TEACHING ACTIVITIES (SP: Spring Semester, AU: Autumn Semester)**

Instructor in the following graduate courses at The Ohio State University, Department of Mathematics, Columbus, Ohio, USA

- SP 2020 – 21 5202 (Introduction to Real Analysis II), two sections
- AU 2020 – 21 5201 (Introduction to Real Analysis I)
- SP 2019 – 20 5202 (Introduction to Real Analysis II), two sections
- SP 2018 – 19 5202 (Introduction to Real Analysis II), two sections
- SP 2017 – 18 5202 (Introduction to Real Analysis II), two sections
- AU 2017 – 18 5201 (Introduction to Real Analysis I), two sections
- SP 2015 – 16 5202 (Introduction to Real Analysis II), two sections

Instructor in the following undergraduate courses at the Aristotle University of Thessaloniki, Thessaloniki, Greece

- AU 2021 – 22 0204 (Topology of Metric Spaces)
- AU 2021 – 22 0207 (Introduction to Real Analysis)

Instructor in the following undergraduate courses at The Ohio State University, Department of Mathematics, Columbus, Ohio, USA

- AU 2020 – 21 4545 (Analysis Overview)
- SP 2019 – 20 3345 (Foundations of higher Mathematics), two sections
- AU 2019 – 20 4545 (Analysis Overview)

AU 2019 – 20 4551 (Vector Analysis)

SP 2018 – 19 3345 (Foundations of higher Mathematics), two sections

AU 2018 – 19 4545 (Analysis Overview)

AU 2018 – 19 4551 (Vector Analysis)

SP 2017 – 18 3345 (Foundations of higher Mathematics), two sections (5-week substitute)

AU 2017 – 18 4545 (Analysis Overview)

SP 2016 – 17 3345 (Foundations of higher Mathematics), two sections

AU 2016 – 17 4547 (Introductory Analysis I), two sections

AU 2015 – 16 1161.01 (Accelerated Calculus I), two sections

SP 2014 – 15 2162.02 (Accelerated Calculus II), The Fundamentals of Engineering for Honors (F.E.H.) Program, two sections

AU 2014 – 15 1161.01 (Accelerated Calculus I)

AU 2014 – 15 1151 (Calculus I), two sections (both physical and on-line teaching)

Teaching Assistant (TA) in the following Departments and undergraduate courses at the University of Athens, Athens, Greece

Department of Mathematics

SP 2012 – 13 Measure theory

AU 2010 – 11 Advanced Calculus I

SP 2008 – 09 Analytical Geometry

AU 2008 – 09 Advanced Calculus I

AU 2008 – 09 Operator theory

SP 2007 – 08 Advanced Calculus I

AU 2007 – 08 Advanced Calculus I

Department of Informatics and Telecommunications

AU 2008 – 09 Analysis I (both physical and on-line teaching)

Department of Physics

SP 2007 – 08 Mathematical Methods in Physics I

- **ORGANISATION OF CONFERENCES**

- 2022 Crossroads: ergodic theory, harmonic analysis, and combinatorics. 2022 Spring Eastern Sectional Meeting #1176 of the American Mathematical Society, Tufts University in Medford, MA, March 19-20 (**co-organizer** with D. Glasscock and J. Roos)
- 2012 Hellenic Mathematical Society's 29th Pan-Hellenic Conference on Mathematical Education, November 9-11 2012, Kalamata, Greece (**co-organizer**)

- **ORGANISATION OF SEMINARS**

- 2020 – Today Co-organizer with Pr. Dan Thompson of the ergodic theory seminar, Department of Mathematics, The Ohio State University, Columbus, Ohio, USA
- 2015 – 2021 Organizer of student-run seminars in the area of ergodic theory, Department of Mathematics, The Ohio State University, Columbus, Ohio, USA (10-14 participants on average)

- **INSTITUTIONAL RESPONSIBILITIES**

- 2008 – 2009 Member of the General Council of the Department of Mathematics, University of Athens, Athens, Greece
- 2007 – 2008 Member of the General Council of the Department of Mathematics, University of Athens, Greece

- **COMMISSIONS OF TRUST**

- 2008 – 2009 Administrative assistant of the Postgraduate Students' Union of the Department of Mathematics, University of Athens, Athens, Greece
- 2007 – 2008 Member of the Postgraduate Students' Union of the Department of Mathematics, University of Athens, Greece

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

- 2017 – 2018 Member of the American Mathematical Society (AMS)
- 2015 – 2018 Member of the Mathematical Association of America (MAA)
- 2000 – Today Member of the Hellenic Mathematical Society (HMS)

- **MAJOR COLLABORATIONS**

- 2011 A Harmonic Analysis view on Neuroscience Imaging
A. K., P. Hernandez-Herrera, D. Jimenez, I. A. Kakadiaris, D. Labate, F. Laezza and M. Papadakis. Department of Mathematics, Department of Computer Science, TLC2, Texas Medical Center, University of Houston, Houston, Texas, USA

- **PARTICIPATION IN CONFERENCES**

Participated in numerous conferences, in eleven (11) of which giving a talk

- 2019 Summer Meeting of Young Researchers in Mathematics, July 16-17, 2019, Athens, Greece (Main Speaker - Invitation)
Talk title: *Multiple averages along polynomials and applications to joint ergodicity.*
- 2018 First Congress of Greek Mathematicians FCGM-2018, June 25-30, 2018, Athens, Greece (Invitation)
Talk title: *Multiple ergodic averages and applications.*
- 2018 16th Panhellenic Conference on Mathematical Analysis, May 25-27, 2018, Samos, Greece
Talk title: *Ergodic averages with independent polynomial iterates.*
- 2018 (AMS) Special Session on Ergodic Theory and Dynamics in Combinatorial Number Theory, April 21-22, 2018, Boston, MA, USA
Talk title: *Pointwise multiple averages for sublinear functions.*
- 2016 TOPOSYM 2016, July 25-29 2016, Prague, Czech Republic
Talk title: *On the convergence of multiple correlation sequences with integer part polynomial iterates.*
- 2015 Midwest Dynamical Systems Meeting, October 30-November 1 2015, Columbus, Ohio, USA
- 2015 Ergodic theory and Combinatorics conference, June 8-12 2015, Kristiansand, Norway
- 2014 2014 International Conference on Topology and its Applications, July 3-7 2014, Nafpaktos, Greece
Talk title: *Ramsey theory and topological dynamics for infinite semigroups with digital representation.*
- 2012 Hellenic Mathematical Society's 29th Pan-Hellenic Conference on Mathematical Education, November 9-11 2012, Kalamata, Greece (**co-organizer**)
Talk title: *Density theorems for rational numbers.*
- 2011 Nis-Athens-Caserta Mathematical Forum, October 15-16 2011, Athens, Greece
Talk title: *Rational dynamical systems and some applications.*
- 2010 Mathematical Analysis weekend for new researchers, November 26-28 2010, Athens, Greece
Talk title: *Rational topological dynamical systems.*
- 2010 International Conference on Topology and its Applications, June 26-30 2010, Nafpaktos, Greece
Talk title: *Rational topological dynamics and combinatorial theory.*
- 2010 13th Pan-Hellenic Conference of Mathematical Analysis, May 28-29 2010, Ioannina, Greece
Talk title: *Partition theorems for rational numbers.*
- 2008 Problems in Analysis, 26-28 September 2008, Karlovasi, Greece.

- **PARTICIPATION IN WORKSHOPS**

Participated in three of the most important for the ergodic theory research area workshops, in one of which with a talk

- 2014 (Participation after invitation) Combinatorics Meets Ergodic Theory, July 19-24 2014, BIRS, Alberta, Canada
Organizers: N. Frantzikinakis, B. Kra and J. Wolf.
- 2013 Ergodic Theory with connections to Arithmetic, June 3-7 2013, Crete, Greece
Organizers: N. Frantzikinakis and B. Kra.
- 2012 Oberwolfach Arbeitsgemeinschaft: Ergodic Theory and Combinatorial Number Theory, October 7-13 2012, Oberwolfach, Germany
Organizers: T. Tao, T. Ziegler, V. Bergelson and N. Frantzikinakis.
(Invitation for giving one of the twenty three (23) talks of the program)
Talk title (talk no 17): *Ultrafilters and coloring problems.*

- **VARIOUS TALKS**

I gave **talks** in the following Universities in various seminars to present and advertise my work

Virginia Tech University, Online Seminar, USA	One Seminar talk (2021)
The Ohio State University, Columbus, Ohio, USA	One Welcome Seminar talk (Colloquium Style, 2014) and Various Seminar talks (2014-2021)
Toruń ETDS Online Seminar, Poland	One Seminar talk (2020)
University of Chile, Santiago, Chile	One Seminar talk (2019) Invitation with short visit by: A. Maass
Center for Mathematical Modeling (CMM), University of Chile, Santiago, Chile	One Seminar talk (2018) Invitation with short visit by: S. Donoso
Northwestern University, Evanston, Illinois, USA	One Seminar talk (2018) Invitation with short visit by: J. Moreira
University of Athens, Athens, Greece	Various Seminar talks (2008-2014) Invitation by: V. Farmaki
University of Crete, Heraklion, Greece	Two Seminar talks (2013, 2016) Invitations with short visits by: N. Frantzikinakis
Rice University, Houston, Texas, USA	One Seminar talk (2011)
Texas Learning and Computational Center (TLC2), University of Houston, Houston, Texas, USA	One Seminar talk (2011)
University of Houston, Houston, Texas, USA	One Seminar talk (2011)

- **OTHER ACTIVITIES**

- 2014 – Today Referee in international Mathematical journals as:
-Journal of London Mathematical Society
-Discrete and Continuous Dynamical Systems
-Topology and its Applications
- 2020 – Today Co-organizer with Pr. Dan Thompson of the ergodic theory seminar at the Department of Mathematics, The Ohio State University, Columbus, Ohio, USA
- 3/2022 Co-organizer of the Crossroads: ergodic theory, harmonic analysis, and combinatorics, 2022 Spring Eastern Sectional Meeting #1176 of the American Mathematical Society, Tufts University in Medford, MA, March 19-20
- Spring 2019 Completed an on-line course about teaching offered by UITL (University Institute for Teaching and Learning)
- Spring 2018 Applied IR (Instructional Redesign) via UITL for the graduate course 5202 (Introduction to Real Analysis II)
- Spring 2019 Additional redesign via UITL for the 5202 graduate course.
- Autumn 2016 Participation in the on-line seminar entitled “AU16 Teaching and Learning in the Mathematics Classroom” offered by The Ohio State University, Department of Mathematics for the faculty
- 2016 – 2021 Co-organizer of the graduate seminar “ergodic theory and combinatorial number theory” at the Department of Mathematics, The Ohio State University, Columbus, Ohio, USA
- 2015 – 2016 Co-organizer of the graduate seminar “ergodic theory and smooth dynamics” at the Department of Mathematics, The Ohio State University, Columbus, Ohio, USA
- 11/2012 Co-organizer of the Hellenic Mathematical Society’s 29th Pan-Hellenic Conference on Mathematical Education, November 9-11 2012, Kalamata, Greece

- **MASTER THESIS**

In order to obtain my Master’s Diploma in Pure Mathematics by the Department of Mathematics at the University of Athens, I defended my thesis entitled:

“Ergodic Ramsey theory, theorems of van der Waerden, Carlson and Szemerédi”.

Supervisor: V. Farmaki.

- **DISSERTATION**

In order to obtain my Ph.D. Diploma in Pure Mathematics by the Department of Mathematics at the University of Athens, I defended my dissertation entitled:

“Topics in ergodic Ramsey theory”.

Supervisor: V. Farmaki.

- **PUBLICATION LIST**

0. *Themes of ergodic Ramsey theory*
Dissertation, University of Athens, Athens, Greece, 2011

Refereed Journal Articles

1. *On Katznelson's Question for skew product systems*
To appear in the Bulletin of the American Mathematical Society (available on arxiv:2106.11393)
(with D. Glasscock, and F. K. Richter)
2. *Seminorms for multiple averages along polynomials and applications to joint ergodicity*
To appear in Journal d'Analyse Mathématique (available on arXiv:1902.10237)
(with S. Donoso and W. Sun)
3. *Structure of multicorrelation sequences with integer part polynomial iterates along primes*
Proceedings of the American Mathematical Society, 149 (2021), No 1, 209-216
(with A. N. Le, J. Moreira, and F. K. Richter)
4. *Multiple ergodic averages for tempered functions,*
Discrete and Continuous Dynamical Systems, 41 (3) (2021), 1177-1205
5. *Pointwise multiple averages for sublinear functions*
Ergodic Theory and Dynamical Systems, 40 (2020), 1594-1618
(with S. Donoso and W. Sun)
6. *Multiplicative combinatorial properties of return time sets in minimal dynamical systems*
Discrete and Continuous Dynamical Systems, 39 (2019), no. 10, 5891-5921
(with D. Glasscock and F. K. Richter)
7. *Integer part independent polynomial averages and applications along primes*
Studia Mathematica, 249 (2019), no. 3, 233-257
(with D. Karageorgos)
8. *Integer part polynomial correlation sequences*
Ergodic Theory and Dynamical Systems, 38 (2018), no. 4, 1525-1542
9. *Closest integer polynomial multiple recurrence along shifted primes*
Ergodic Theory and Dynamical Systems, 38 (2018), no. 2, 666-685
10. *Abstract topological Ramsey theory for nets*
Topology and its Applications, 201 (2016), 314-329
(with V. Farmaki, D. Karageorgos, and A. Mitropoulos)
11. *Topological dynamics on nets*
Topology and its Applications, 201 (2016), 414-431
(with V. Farmaki, D. Karageorgos, and A. Mitropoulos)
12. *Extended Ramsey Theory for Words Representing Rationals*
Fundamenta Mathematicae, 223 (2013), no. 1, 1-27
(with V. Farmaki)
13. *Topological Dynamics indexed by words*
Topology and its Applications, 159 (2012), 1678-1690
(with V. Farmaki)

14. *Rational Dynamical Systems*
Topology and its Applications, 159 (2012), 1993-2003

Electronic prepublications

15. *Multiple ergodic averages for variable polynomials*
Available on arXiv:2101.00534
16. *Decomposition of multicorrelation sequences and joint ergodicity*
Available on arxiv:2106.01058
(with S. Donoso, A. Ferré Moragues, and W. Sun)

Proceedings of Conferences

17. *Notes on ergodic averages with polynomial iterates (survey)*
Proceedings of the 16th Pan-Hellenic Conference on Mathematical Analysis. (2018)
18. *Density theorems for rational numbers (research article)*
Proceedings of the Hellenic Mathematical Society's 29th Pan-Hellenic Conference on Mathematical Education. Available also on arXiv:1212.4187 (2012).
19. *Notes on additive and multiplicative Ramsey theory for the set of natural numbers (survey)*
Proceedings of the Oberwolfach Arbeitsgemeinschaft: Ergodic Theory and Combinatorial Number Theory (2012).

Book Chapters

20. *A Harmonic Analysis view on Neuroscience Imaging (research article)*
- Part of Chapter 8 in the book *Excursions in Harmonic Analysis, Volume 2*, Birkhauser, 2013 edition (January 3 2013) edited by T. Anfwrens, R. V. Balan, J. J. benedetto, W. Czaja and K. Okoudjou
Co-authored by P. Hernandez-Herrera, D. Jimenez, I. A. Kakadiaris, D. Labate, F. Laezza and M. Papadakis (Part of a Major collaboration between the Department of Mathematics, Department of Computer Science, TLC2 and Texas Medical Center at the University of Houston, Houston, Texas, USA)

• RESEARCHER ID AND LINKS

ResearcherID: N-1330-2017

Google scholar: <https://scholar.google.com/citations?user=d02p9hEAAA&hl=en&oi=sra>

Personal webpage: <http://andreaskoutsogiannis.weebly.com/>

• PAPERS IN PREPARATION

21. *Averages along strongly independent polynomials (working title)*
(with W. Sun)
22. *Joint ergodicity along Hardy field functions under finite ergodicity assumptions (working title)*
(with S. Donoso, A. Ferré Moragues and W. Sun)

- **ACTIVE PROJECTS**

1. Study of new notions of largeness that will characterize intermediate notions between the weakly mixing and mildly mixing ones
(with V. Bergelson)
2. Study of potential decomposition of multicorrelation sequences and joint ergodicity for sequences given by the integer part of Hardy field functions of polynomial degree
(with S. Donoso, A. Ferré Moragues and W. Sun)
3. Study of $\{x, y, x+y, xy\}$ patterns in infinite fields
(with A. N. Le, J. Moreira and F. K. Richter)

- **RECOMMENDATIONS**

1. (Research) Name: Vitaly Bergelson
Position: Distinguished Professor of Math and Physical Sciences
Conduct Number: +1-614-292-1180
Email: bergelson.1@osu.edu
Organization: The Ohio State University
Department: Mathematics
2. (Research) Name: Nikos Frantzikinakis
Position: Professor of Mathematics
Conduct Number: +30-2810-393853
Email: nikosf@math.uoc.gr
Organization: University of Crete
Department: Mathematics
3. (Research) Name: Daniel Thompson
Position: Professor of Mathematics
Conduct Number: +1-614-292-0365
Email: thompson.2455@osu.edu
Organization: The Ohio State University
Department: Mathematics
4. (Research) Name: Vassiliki Farmaki
Position: Professor of Mathematics
Conduct Number: +30-210-7276-385
Email: vfarmaki@math.uoa.gr
Organization: National and Kapodistrian University of Athens
Department: Mathematics
5. (Teaching) Name: William Husen
Position: Director of Undergraduate Institution
Conduct Number: +1-614-292-5101
Email: husen.1@osu.edu
Organization: The Ohio State University
Department: Mathematics