

CURRICULUM VITAE

Associate Professor AHMET MUHTAR GÜLOĞLU

1. PERSONAL DATA

- 1.1. Date & Place of Birth : 28 March 1976, İstanbul
1.2. Address : Department of Mathematics, SA 131
Bilkent, 06800 Ankara, TURKEY
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2. ACADEMIC DEGREES

- 2.1. Assoc. Prof., Mathematics, Higher Education Council of Turkey 2011
2.2. Ph.D., Mathematics, Ohio State University, USA 2005
2.3. B.Sc., Mathematics, Middle East Technical University, Turkey 1998

3. EMPLOYMENT HISTORY

- 3.1. 6/21 – present, Assoc. Prof. Bilkent University, Mathematics
3.2. 9/08 – 6/21 Assist. Prof., Bilkent University, Mathematics
3.3. 9/18 – 9/19, Visiting Professor (Sabbatical Leave), Queen’s University, Canada
3.4. 7/05 – 7/08, Postdoctoral Fellow, University of Missouri, Columbia, USA
3.5. 1/99 – 6/05, Teaching Assistant, Ohio State University, USA

4. SCHOLARSHIPS AND AWARDS

- 4.1. Fellowship awarded via an exam during freshmen year by the Turkish Scientific and Technical Research Council 1995 – 1998
4.2. NSF Fellowship Summer 2003, 2004
Ohio State University, USA
4.3. Vigre SGA Fellowship Winter 2005
Ohio State University, USA

5. SCHOLARLY AND PROFESSIONAL DUTIES

- 5.1. Member of the Editorial Board 2009 – 2013
Matematik Dünyası, Türk Matematik Derneği
- 5.2. Jury for Sedat Simavi Award 2011
- 5.3. Refereeing for Scholarly and Professional Journals
Canadian Bulletin of Mathematics
Forum Mathematicum
The Ramanujan Journal
Hacettepe Journal of Mathematics
The Hardy-Ramanujan Journal
Acta Arithmetica
Taiwanese Journal of Mathematics
Ankara Math J.

6. INVITED LECTURES AND INVITED TALKS

In addition to seminar talks given at Bilkent Univ., M.E.T.U., TOBB Univ.:

- 6.1. *Multiplicative Number Theory*, University of Illinois at Urbana-Champaign, Feb. 2005
- 6.2. *Number Theory Winter Camp*, Şirince, Izmir, 2010
- 6.3. *Analytic Number Theory Conference*, Göttingen, Germany, April 2010
- 6.4. *Number Theory, Arithmetic and Algebraic Geometry*, METU, Cyprus, April 2010
- 6.5. *23rd National Mathematics Conference*, Kayseri, Turkey, August 2010
- 6.6. *Analytic Number Theory Conference*, Feza Gürsey Institute, Turkey, Dec. 10–12, 2010
- 6.7. *Analytic Number Theory Workshop*, Univ. of Oxford, England, Sept. 28 – Oct. 3, 2014
- 6.8. *Antalya Cebir Günleri*, Şirince, İzmir, May 20 – 24, 2015
- 6.9. *CIMPA-ICTP Artin L-functions, Artin's Primitive Roots Conjecture And Applications*, Şirince, İzmir, May 29 - June 9, 2017
- 6.10. *Cyclicity of elliptic curves modulo primes in arithmetic progressions*, Queen's Univ., Canada, Feb. 5th, 2019
- 6.11. *Cubic Characters and some applications I*, Queen's Univ., Canada, 12 June 2019
- 6.12. *Cubic characters and some applications II*, Queen's Univ., Canada, 26 June 2019
- 6.13. *Distribution of zeros of L-functions*, Arithmetica Izmir 3, Dokuz Eylül Üniversitesi, İzmir, 8 Nov. 2019.

- 6.14. *One level density for cubic Dirichlet L-functions*, Queen's Univ., Canada, 13 October 2020
- 6.15. *Non-vanishing of Cubic Twists of L-functions*, 2020 CMS Virtual Winter Meeting, 5 December 2020

7. TEACHING

7.1. Graduate Courses

- 7.1.1. Math 653, Analytic Number Theory I
- 7.1.2. Math 654, Analytic Number Theory II

7.2. Undergraduate Courses

- 7.2.1. Math 101, Calculus I
- 7.2.2. Math 102, Calculus II
- 7.2.3. Math 123, Abstract Mathematics I
- 7.2.4. Math 124, Abstract Mathematics II
- 7.2.5. Math 132, Discrete Mathematics
- 7.2.6. Math 220, Linear Algebra
- 7.2.7. Math 223, Linear Algebra I for Math Students
- 7.2.8. Math 224, Linear Algebra II for Math Students
- 7.2.9. Math 253, Introduction to Number Theory
- 7.2.10. Math 453, Algebraic Number Theory

8. GRADUATE STUDENT SUPERVISION

- 8.1. Yıldıırım Akbal, Ph.D., "Piatetski-Shapiro Prime Number Theorem and Chebotarev Density Theorem", 5/12 – 7/15
- 8.2. Cazibe Kavalcı, M.Sc., "One Level Density of Hecke L-Functions Associated With Cubic Characters at Prime Arguments", 9/20 – 1/23
Ph.D., title undecided, 1/2023 – present

8.3. Postdoctorate Fellows Mentored

- 8.3.1. Ayhan Dil, 2011 – 2012
- 8.3.2. Yıldıırım Akbal, 2015 – 2017

9. SCHOLARLY PUBLICATIONS

9.1. Ph.D. Dissertation, “On Low Lying Zeros of Automorphic L-Functions”, 6/2005, Advisor: Wenzhi Luo, The Ohio State University

9.2. Chapters in books or monographs

9.2.1. “Descartes Numbers” in Anatomy of Integers, CRM Proc. Lecture Notes, Amer. Math. Soc., Providence, RI, 46 (2008), 167 - 173. W. Banks, C. W. Nevans, F. Saidak

9.3. Articles in refereed journals

9.3.1. “Low-lying zeroes of symmetric power L -functions”. *IMRN*, No. 9, 2005, 517 – 549.

9.3.2. “Representations of integers as sums of primes from a Beatty sequence”, *Acta. Arith.*, **130**, No. 3, 2007, 255 – 275. W. D. Banks, C. W. Nevans

9.3.3. “Sums of multiplicative functions over a Beatty sequence”, *Bull. Aust. Math. Soc.*, **78**, no. 2, 2008, 327 – 334. C. W. Nevans

9.3.4. “On the congruence $n \equiv a \pmod{\varphi(n)}$ ”, *Integers: Electronic Journal Of Combinatorial Number Theory*, **8**, A59, 2008, 8pp. W. D. Banks, C. W. Nevans

9.3.5. “Values of the Carmichael Function Equal to a Sum of Two Squares”, *Turk. J. Math.*, **33**, no. 1, 2009, 9 – 16. W. Banks

9.3.6. “On primitive Dirichlet characters and the Riemann hypothesis”, *J. Number Theory*, **130**, no. 3, 2010, 574 – 579. W. D. Banks, C. W. Nevans

9.3.7. “Sums with convolutions of Dirichlet characters to cube-free modulus”, *Proc. Amer. Math. Soc.*, **139**, No. 9, 2011, 3195 – 3202.

9.3.8. “Carmichael meets Chebotarev”, *Canadian Mathematical Bulletin*, **56**, no. 4, 2013, 695 – 708. W. D. Banks, A. M. Yeager

9.3.9. “Waring’s problem for Beatty sequences and a local to global principle”, *J. Théorie Nombres Bordeaux*, **26**, no. 1, 2014, 1 – 16. W. D. Banks, R. C. Vaughan

9.3.10. “Piatetski-Shapiro meets Chebotarev”, *Acta. Arith.*, **167**, no. 4, 2015, 301 – 325. Y. Akbal

9.3.11. “Waring’s problem with Piatetski-Shapiro Numbers”, *Mathematika* **62**, no. 2, 2016, 524 – 550. Y. Akbal

9.3.12. “Arithmetic properties of coefficients of L -functions of elliptic curves”, *Monatsh. Math.*, **187**, no. 2, 2018, 247 – 273. F. Luca, A. Yalçiner

9.3.13. “On Waring-Goldbach problem with Piatetski-Shapiro primes”, *J. Number Theory*, **185**, 2018, 80 – 92. Y. Akbal

9.3.14. “Waring-Goldbach Problem with Piatetski-Shapiro Primes”, *Journal de Théorie des Nombres de Bordeaux*, **30**, no. 2, 2018, 449 – 467. Y. Akbal

- 9.3.15. "The Paley Graph Conjecture and Diophantine m -tuples", J. Combin. Theory Ser. A, Volume 170, 2020, 105155, ISSN 0097-3165, <https://doi.org/10.1016/j.jcta.2019.105155>.
M. Ram Murty
- 9.3.16. "Cyclicity of Elliptic Curves Modulo Primes in arithmetic progressions", Canad. J. Math. 2021, <https://doi.org/10.4153/S0008414X21000237>, Y. Akbal
- 9.3.17. "One-Level Density and Non-Vanishing for Cubic L-Functions Over the Eisenstein Field", IMRN, rnab240, <https://doi.org/10.1093/imrn/rnab240>, published: 06 September 2021, C. David
- 9.3.18. "Variations on a theme of Mirsky", International Journal of Number Theory, <https://doi.org/10.1142/S179>
Y. Akbal
- 9.3.19. "Mollified moments of cubic Dirichlet L-functions over the Eisenstein field", J. Math. Anal. Appl., Volume 533, Issue 2, 2024, 128014, 10.1016/j.jmaa.2023.128014, Yesilyurt, H.
- 9.3.20. "A modular equation of degree 61", Ramanujan J (2023), 10.1007/s11139-023-00794-2, Yesilyurt, H.

9.4. Papers, books etc. submitted for publication or in preparation

- 9.4.1. "Non-vanishing of Cubic Dirichlet L-Functions", submitted to Proc. Amer. Soc.

10. NUMBER OF CITATIONS (IN CITATION INDEX) TO PUBLICATIONS IN (11):

85 Scopus, 88 MathSciNet

10.1. Citations by others: 80

10.2. Self citations: 5

11. CURRENT RESEARCH INTEREST(S): Analytic Number Theory. In particular,

11.1. Additive Problems in Number Theory,

11.2. Sparse Sequences

11.3. Exponential/Character Sums

11.4. Automorphic Forms and L-functions

11.5. Density theorems

11.6. Elliptic Curves

11.7. Sieve Theory

12. GRANTS

- 12.1.** Turkish Scientific and Technical Research Council Apr. 2015 – Apr. 2017
1001 Research Grant No. 114F404, Principal Investigator 115,350 TL
- 12.2.** Turkish Scientific and Technical Research Council Aug. 2020 – Dec. 2022
1001 Research Grant No. 119F413, Principal Investigator 121,300 TL
- 13. CONTRIBUTIONS TO BILKENT UNIVERSITY**
- 13.1.** Undergraduate Advisor 2011 – 2014, 2019 – present
- 13.2.** Preparation of the conference booklet for “7th Ankara Mathematics Days” 2012
- 13.3.** Supervisor for 17 undergraduate senior projects 2009 – 2019
- 13.4.** Undergraduate Curriculum Committee 2015 – present
- 13.5.** Undergraduate Recruitment Committee
- 13.6.** Graduate Program Advisor
- 13.7.** Graduate Candidacy Exam Committee Member
- 13.8.** Introductory talks to new undergrad applicants about mathematics and 2015, 2016
department of mathematics, Bilkent University
- 13.9.** Committee member for Quality Management in Education 2019 – 2023
- 14. CONTRIBUTIONS TO SOCIETY AT LARGE**
- 14.1.** High School Talks