

Burak Kaya

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<https://blog.metu.edu.tr/burakk>

Personal Info	Born in 1988. Turkish citizen.	
Education	Ph.D. in Mathematics, Rutgers, The State University of New Jersey, New Brunswick, NJ, USA	May 2016
	Dissertation: <i>Cantor minimal systems from a descriptive perspective</i> Advisor: Simon Thomas	
	B.S. in Mathematics with High Honor, CGPA: 3.90 / 4.00, Ranked 1 st in the Class of 2010 of the Department of Mathematics, Middle East Technical University, Ankara, Turkey	June 2010
	Ankara Atatürk Anatolian High School, Ankara, Turkey	July 2006
Positions	<ul style="list-style-type: none">Teaching Assistant Rutgers UniversityInstructor METUAssistant Professor METU	<p>September 2010-May 2016.</p> <p>July 2016-August 2016, February 2017-September 2017.</p> <p>September 2017-present.</p>
Research Interests	Set theory, descriptive set theory and its applications to other fields of mathematics such as graph theory, topological dynamics and group theory.	
Publications	<ul style="list-style-type: none">Kaya, B. <i>The complexity of the topological conjugacy problem for Toeplitz subshifts</i>, Israel J. Math. 220 (2017), no. 2, 873-897. doi:10.1007/s11856-017-1537-4Kaya, B. <i>The complexity of topological conjugacy of pointed Cantor minimal systems</i>, Arch. Math. Logic 56 (2017), no. 3-4, 215-235. doi:10.1007/s00153-017-0534-yKaya, B., Kegel, O.H. & Kuzucuoglu, M. <i>On the existence of κ-existentially closed groups</i>, Arch. Math. (2018) 111, no. 3, 225-229. doi:10.1007/s00013-018-1213-xKaya, B & Sağlam, I. <i>On the closed Ramsey numbers $R^{cl}(\omega + n, 3)$</i>, Israel J. Math. 245 (2021), 963-989. doi:10.1007/s11856-021-2239-5Kaya, B., Kuzucuoglu, M. <i>Automorphisms of κ-existentially closed groups</i>, Monatsh Math (2022). doi:10.1007/s00605-022-01730-0	

- Kaya, B., Kuzucuoğlu, M. *Existentially and κ -existentially closed groups*, Int. J. Group Theory (2022).
doi:10.22108/IJGT.2022.131513.1758
- Benli, M.G. & Kaya, B. *Descriptive complexity of subsets of the space of finitely generated groups*, Expo. Math. 40 (2022), no. 4, 1116–1134.
doi:10.1016/j.exmath.2022.08.001
- Bilge, O. & Kaya, B. *Frucht's theorem in Borel setting*, Period. Math. Hungar (2023).
doi:10.1007/s10998-023-00537-2

**Conferences and
Workshops
Attended**

- 35. Ulusal Matematik Sempozyumu
Trakya University, Edirne, Turkey. September 2023
- Antalya Algebra Days XXI
Izmir, Turkey. May 2019
- IMBM Mathematics Days II
Istanbul, Turkey September 2018
- Simon Thomas, the first 60 years
Rutgers University, New Brunswick, NJ. September 2017
- BN-Pair Conference
Istanbul, Turkey. October 2016
- Association for Symbolic Logic 2016 North American Annual Meeting
Storrs, CT. May 2016
- 2015 Canadian Mathematical Society Winter Meeting
Montréal, Canada. December 2015
- 8th Young Set Theory Workshop
Jerusalem, Israel. October 2015
- Antalya Algebra Days XVII
Izmir, Turkey. May 2015
- 2014 Rutgers Logic Conference
Rutgers University, New Brunswick, NJ. October 2014
- 7th Young Set Theory Workshop
Będlewo, Poland. May 2014
- 2013 Fall Mid-Atlantic Mathematical Logic Seminar
Rutgers University, New Brunswick, NJ. October 2013
- 6th Young Set Theory Workshop
Oropa, Italy. June 2013
- NY Graduate Student Logic Conference
CUNY Graduate Center, New York City, NY. April 2013
- 2012 Fall Mid-Atlantic Mathematical Logic Seminar
Rutgers University, New Brunswick, NJ. October 2012
- UCLA Logic Center Summer School for Undergraduates
Los Angeles, CA. July 2009

Talks and Seminars

- 35. Ulusal Matematik Sempozyumu
Trakya University, Edirne, Turkey. September 2023
- Izmir Institute of Technology Mathematics Department, General Seminar
Online Fall 2021
- Yozgat Bozok University Mathematics Department, General Seminar
Online Fall 2021
- METU Mathematics Department, Ergodic Theory Meetings
Ankara, Turkey Spring 2019
- Çankaya University Mathematics Department
Ankara, Turkey November 2018
- Atılım University Mathematics Department
Ankara, Turkey October 2018
- IMBM Mathematics Days II
Istanbul, Turkey September 2018
- METU Mathematics Department, General Seminar
Ankara, Turkey.
October 2016, November 2017/2021/2023, December 2019/2022
- Hacettepe Mathematics Department, General Seminar
Ankara, Turkey. October 2017
- Association for Symbolic Logic 2016 North American Annual Meeting
Storrs, CT. May 2016
- Rutgers Mathematics Department, Logic Seminar
Piscataway, NJ. February 2016
- 2015 Canadian Mathematical Society Winter Meeting
Montréal, Canada. December 2015
- Cornell Mathematics Department, Logic Seminar
Ithaca, NY. November 2015
- MSFAU Mathematics Department, General Seminar
Istanbul, Turkey.
January 2014/2015, December 2015, November 2016, March 2018, June 2019
- METU Mathematics Department, Algebra Seminar
Ankara, Turkey.
December 2013/2014/2015, June 2015, Fall 2017, Spring 2018
- Rutgers Mathematics Department, Descriptive Set Theory Seminar
Piscataway, NJ. Fall 2013

Teaching Experience

Instructor at METU

- MATH 111 Fundamentals of Mathematics Fall 2018/2019/2022
- MATH 116 Basic Algebraic Structures Spring 2019/2023
- MATH 119 Calculus with Analytic Geometry
Fall 2017/2018/2020, Spring 2019/2020
- MATH 120 Calculus of Functions of Several Variables
Summer 2016/2017/2018/2019, Spring 2017/2018/2021
- MATH 123 Introduction to Number Theory Fall 2023
- MATH 319 Lebesgue Integral Fall 2017

- MATH 320 Set Theory Spring 2017/2018/2019/2021/2023
- MATH 349 Introduction to Mathematical Analysis Fall 2023
- MATH 406 Introduction to Mathematical Logic and Model Theory
Spring 2020, Fall 2021
- MATH 452 Introduction to Functional Analysis Fall 2021
- MATH 496 Supervised Independent Study & Research Fall 2019/2021
- MATH 501 Analysis Fall 2019/2022
- MATH 535 Topology Fall 2020
- MATH 779 Set Theory Spring 2022

Instructor at Rutgers University

- MATH 151 Calculus I for Mathematical and Physical Sciences Summer 2012

Teaching assistant at Rutgers University

- MATH 135 Calculus I Fall 2011, Spring 2012
- MATH 151 Calculus I for Mathematical and Physical Sciences Fall 2012/2013
- MATH 152 Calculus II for Mathematical and Physical Sciences
Fall 2014, Spring 2016

Grader at Rutgers University

- MATH 300 Introduction to Mathematical Reasoning Fall 2010, Spring 2011
- MATH 403 Introduction to Theory of Functions of a Complex Variable
Spring 2011

Mentor for the Directed Reading Program of Rutgers Mathematics Department

- Supervised Yao Rui Yeo for his project in Set Theory. Spring 2013
- Supervised Brennan Young for his project in Set Theory. Fall 2013

(Voluntary) Instructor at the Nesin Mathematics Village

- Some results in combinatorial set theory Summer 2017
- Paradoxical decompositions: The Banach-Tarski paradox and others
Summer 2018
- Axiom of determinacy and some of its consequences Summer 2018
- Ultrafilters and how to use them Summer 2019

(Voluntary) Instructor at TMD-Ankara Branch Workshop II

- Measure theory Fall 2019

(Voluntary) Instructor at Çakıllarası Mathematics Village

	<ul style="list-style-type: none"> • Fantastic Beasts: What are ultrafilters and what are they for? Summer 2023
Thesis supervised	<ul style="list-style-type: none"> • Irmak Sağlam, Some new bounds on closed ordinal Ramsey numbers, M.Sc., December 2020. • Onur Bilge, Dichotomy theorems and Frucht theorem in descriptive graph combinatorics, M.Sc., August 2023.
Academic Honors and Awards	<ul style="list-style-type: none"> • Received The Scientific and Technological Research Council of Turkey Scholarship for Undergraduates. 2006-2010
Professional memberships	<ul style="list-style-type: none"> • The Turkish Mathematical Society • Mathematics Foundation of Turkey
Languages	Turkish (native), English (fluent).