

Burak Kaya

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

- Personal Info** Born in 1988. Turkish citizen.
- Education** Ph.D. in Mathematics, May 2016
Rutgers, The State University of New Jersey,
New Brunswick, NJ, USA
- Dissertation: *Cantor minimal systems from a descriptive perspective*
Advisor: Simon Thomas
- B.S. in Mathematics with High Honor, June 2010
CGPA: 3.90 / 4.00,
Ranked 1st in the Class of 2010 of the Department of Mathematics,
Middle East Technical University,
Ankara, Turkey
- Ankara Atatürk Anatolian High School, July 2006
Ankara, Turkey
- Positions**
- Teaching Assistant
Rutgers University September 2010-May 2016.
 - Instructor
METU July 2016-August 2016, February 2017-September 2017.
 - Assistant Professor
METU September 2017-present.
- Research Interests** Set theory, descriptive set theory and its applications to other fields of mathematics such as topological dynamics and group theory.
- Publications**
- Kaya, B. *The complexity of the topological conjugacy problem for Toeplitz subshifts*, Israel J. Math. 220 (2017), no. 2, 873-897.
doi:10.1007/s11856-017-1537-4
 - Kaya, B. *The complexity of topological conjugacy of pointed Cantor minimal systems*, Arch. Math. Logic 56 (2017), no. 3-4, 215-235.
doi:10.1007/s00153-017-0534-y
 - Kaya, B., Kegel, O.H. & Kuzucuoğlu, M. *On the existence of κ -existentially closed groups*, Arch. Math. (2018) 111, no. 3, 225-229.
doi:10.1007/s00013-018-1213-x
 - Kaya, B & Sağlam, I. *On the closed Ramsey numbers $R^{cl}(\omega + n, 3)$* , Israel J. Math. 245 (2021), 963-989.
doi:10.1007/s11856-021-2239-5
 - Kaya, B., Kuzucuoğlu, M. *Automorphisms of κ -existentially closed groups*, 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

**Conferences and
Workshops
Attended**

- 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**

- 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, December 2019, November 2021
- 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
- MATH 116 Basic Algebraic Structures Spring 2019
- 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 319 Lebesgue Integral Fall 2017
- MATH 320 Set Theory Spring 2017/2018/2019/2021
- 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, Fall 2021
- MATH 501 Analysis Fall 2019
- MATH 535 Topology Fall 2020

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

Thesis supervised

- Irmak Sağlam, Some new bounds on closed ordinal Ramsey numbers, M.Sc.,
December 2020.

**Academic Honors
and Awards**

- Received The Scientific and Technological Research Council of Turkey Scholarship for Undergraduates. 2006-2010

Languages

Turkish (native), English (fluent).