

# Burak Kaya

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

<b>Personal Info</b>	Born in 1988. Turkish citizen.	
<b>Education</b>	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 first 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
<b>Positions</b>	<ul style="list-style-type: none"><li>• Teaching Assistant Rutgers University</li><li>• Instructor METU</li><li>• Assistant Professor METU</li></ul>	September 2010-May 2016. July 2016-August 2016, February 2017-September 2017. September 2017-present.
<b>Research Interests</b>	Set theory, descriptive set theory and its applications to other fields of mathematics such as topological dynamics and group theory.	
<b>Publications</b>	<ul style="list-style-type: none"><li>• 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/s11856-017-1537-4</li><li>• Kaya, 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-y</li><li>• Kaya, B., Kegel, O.H. &amp; Kuzucuoğlu, M. <i>On the existence of <math>\kappa</math>-existentially closed groups</i>, Arch. Math. (2018) 111, no. 3, 225-229. doi:10.1007/s00013-018-1213-x</li></ul>	
<b>Conferences and Workshops Attended</b>	<ul style="list-style-type: none"><li>• Antalya Algebra Days XXI Izmir, Turkey.</li><li>• IMBM Mathematics Days II Istanbul, Turkey</li><li>• Simon Thomas, the first 60 years Rutgers University, New Brunswick, NJ.</li></ul>	May 2019 September 2018 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**

- METU Mathematics Department, Ergodic Theory Meetings  
Ankara, Turkey Spring 2019
- Çankaya University  
Ankara, Turkey November 2018
- Atılım University  
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
- 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, Spring 2019/2020
- MATH 120 Calculus of Functions of Several Variables  
Summer 2016/2017/2018/2019, Spring 2017/2018
- MATH 319 Lebesgue Integral Fall 2017
- MATH 320 Set Theory Spring 2017/2018/2019
- MATH 406 Introduction to Mathematical Logic and Model Theory  
Spring 2020
- MATH 496 Supervised Independent Study & Research Fall 2019
- MATH 501 Analysis Fall 2019

### 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

**Academic Honors  
and Awards**

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

**Languages**

Turkish (native), English (fluent).