CURRICULUM VITAE

Saadet Öykü Yurttaş
Department of Mathematics
Science Faculty, Dicle university
21280, Diyarbakir, Turkey
email: saadet.yurttas@dicle.edu.tr

EDUCATION:

- Ph.D. in Mathematics, University of Liverpool, UK
  January 2007–July 2011
  Thesis: *Dynnikov coordinates and pseudo-Anosov braids*
  Advisor: Toby Hall.

- B.Sc. in Mathematics (first–class honours degree), University of Dicle, Turkey,
  September 1999–June 2003.

APPOINTMENTS:

- Associate Professor, University of Dicle, 2023-Present

- Assistant Professor, University of Dicle, 2015-2023

- Fulbright Scholar, Columbia University, January 2022-April 2022

- Fulbright Scholar, Georgia Tech, April 2022-July 2022

- Postdoctoral Researcher, Georgia Tech, 2014-2015

- Assistant Professor, University of Dicle, 2011-2014

- PhD student, University of Liverpool, 2007-2011

- Research Assistant, University of Dicle, 2005-2007

RESEARCH INTERESTS:

- Dynamical and combinatorial aspects of mapping class groups; in particular dynamics of pseudo–Anosov homeomorphisms, train tracks, combinatorics of curves on surfaces.

PAPERS:

- On the topological entropy of families of braids, w/Toby Hall, Topology and its Applications, 156 (8) (2009), 1554-1565.

- Geometric intersection of curves on punctured disks, Journal of the Mathematical Society of Japan, 65 (4) (2013), 1153-1168.

- Dynnikov and train track transition matrices of pseudo-Anosov braids, Discrete and Continuous Dynamical Systems-A, 36 (1) (2016), 541-570.

- Counting components of an integral lamination, w/Toby Hall, Manuscripta Mathematica, 153 (2017), 263-278.

- Integral laminations on non-orientable surfaces, w/Mehmetcik Pamuk, Turkish Journal of Mathematics, 42 (2018), 69-82.

- Intersections of multicurves from Dynnikov coordinates, w/Toby Hall, Bulletin of Australian Mathematical Society, 98 (1) (2018), 149-158.

- Applications of the Dynnikov coordinate system on the boundary of Teichmüller space, Teichmüller theory and its impact, Advanced Lectures in Mathematics, 2022.

- Moves on curves on non-orientable surfaces, w/Ferihe Atalan, Rocky Mountain Journal of Mathematics, 52(6) (2022), 1957-1967.

- A recipe for the dilatation of families of pseudo-Anosov braids, Essays in Geometry, dedicated to Norbert A'Campo" (A. Papadopoulos, ed.), European Mathematical Society Press, Berlin, (2023), 111-126.

- An algorithm for determining free products generated by Dehn twists on punctured disks, w/Elif Dalyan, Elif Medetogullari and Ferihe Atalan (submitted)

- Fast Nielsen-Thurston Classification, w/Dan Margalit, Balazs Strenner, and Sam Taylor (submitted).

- Action of mapping class groups in terms of global coordinates, w/ Daniele Alessandrini (under progress)

- Algorithms for curves on non-orientable surfaces (under progress)

BOOKS and OTHER WRITTEN WORK:

- Introduction to Metric and Topological Spaces, William A.Sutherland, (Turkish translation) (Nobel Academic Press, Turkey, 2014).

- Dynnikov koordinatlari ve π_1–train track grafikleri, w/Umut Güngörür, Akademik Platform Fen ve Mühendislik Dergisi, 2019.

- Intersections of multicurves on small Genus non-orientable surfaces, Journal of Mathematical Sciences and Modelling, 4(3), 110-116, 2021.

- Pseudo-Anosov Örgülerin topolojik entropisi ve cekici Matrisler, w/Arife Atay, Igdir Üniversitesi Fen Bilimleri Enstitüsü Dergisi, 11 (3), 2278-2289, 2021.

- Relaxing multicurves on the twice punctured Möbius band, w/Abdullah Baykal and Ferihe Atalan, Middle East Journal of Science, 9(1), 16-22, 2023.

SELECTED TALKS:

Seminar Talks:

- On the topological entropy of pseudo-Anosov braid families, University of Florida, Gainsville, December 2009.
- Dynnikov Coordinates and pseudo-Anosov Braids, Warwick Mathematics Institute, May 2010.
- Study of pseudo-Anosov braids using Dynnikov's coordinates, Bogazici University Seminar, December 2011 (Invited).
- Dynnikov coordinates and pseudo-Anosov braids, Koç University Seminar, December 2011.
- Dynnikov matrices and pseudo-Anosov braids, Université de Strasbourg, Topology and Geometry Seminar, Strasbourg June 2012.
- Pseudo-Anosov braids and Dynnikov coordinates I and II, METU, March 2014
- Dynnikov Coordinates, Geometry &Topology Seminar, Georgia Tech, Atlanta, August 2014
- Dynnikov and train track transition matrices of pseudo-Anosov braids, Geometry &Topology Seminar, University of Wisconsin, Madison, December 2014
- Computations in the mapping class group via global coordinates, Geometry &Topology Seminar, University of Georgia, Athens, March 2015 .
- Computations in the mapping class group via global coordinates, Geometry &Topology Seminar, University of Florida, Gainesville, April 2015.
- Counting components of an integral lamination, Geometry &Topology Seminar, University of Columbia, April 2016.
- Curves, braids and crosscap transpositions, Columbia University, April 2022.
- Computations in braid groups with Dynnikov coordinates, Algebra and Cryptology Seminar, Stevens Institute of Technology, December, 2023.
- Fast computations in mapping class groups via global coordinates, Topology&Group Theory Seminar, Vanderbilt University, December 2023.

Conference Talks:

- Topolgical Entropy of Families of Braids, University of Manchester, Magic Postgraduate Conference followed by regional LMS meeting, Manchester, England, January 2009.
- Nesin Mathematics Village, National Mathematics Symposium, August 2009.
- Dynnikov coordinates and pseudo-Anosov braids, Isaac Newton Institute for Mathematical Sciences, Women in Mathematics Meeting, University of Cambridge, April 2010
- Dynnikov Coordinates and pseudo-Anosov Braids, Conference for Young researchers in Maths, University of Cambridge, March 2010.
- Dynnikov Coordinates and pseudo-Anosov Braids, Geometry and Arithmetic around Teichmüller Theory, Galatasaray University, November 2011

– Dynamics of pseudo-Anosov braids and Dynnikov matrices, GAAGTA, Kunming University of Science and Technology, China, July 2012.

– 26.National Mathematics Conference, Dicle University, September 2013.

– Geometric intersection of curves on punctured disks, Japanese Turkish Joint Geometry Meeting, Galatasaray University, November 2013.

– Computations in the mapping class group via global coordinates, Special Session of Geometric Group Theory and Topology, AMS meeting, Huntsville, March 2015.

– Bir integral laminasyonun baglantili parcalarini saymak, AMG2017, Hacettepe Universitesi, Ankara, May 2017.

– Counting components of an integral lamination, CMCII, Van, August 2017.

– Geometry of Teichmüller space and mapping class groups, Warwick, UK, April 2018 (Invited).

– Teichmüller dynamics, mapping class groups and applications, Grenoble, France, June 2018 (Invited).

– Topology, Geometry, and Dynamics: Rokhlin–100, Euler Mathematical Institute, Saint Petersburg, Russia, August 19–23, 2019.

– Fast Nielsen–Thurston Classification, Algorithms in Complex Dynamics and Mapping Class Groups, ICERM, Brown University, Providence, November 2-3, 2019 (Invited).

TEACHING:

· Analytical Geometry II (tutorial) Spring 2006, University of Dicle.

· Calculus I (tutorial), Fall, 2006, University of Dicle; Fall 2007, University of Liverpool.

· Iteration and Fourier Series (tutorial and grading), Spring 2009, University of Liverpool.

· Linear Algebra (tutorial and grading), Spring 2010, University of Liverpool; Fall, Spring 2011, 2012, 2013, 2021 University of Dicle.

· Numerical Analysis, Fall 2012, 2013 University of Dicle.

· Introduction to Algebraic Topology, Fall 2013, 2014, 2016, University of Dicle.

· Introduction to Dynamical Systems, Spring 2013, 2014, 2016, 2023, University of Dicle.

· Analytic Geometry I, Fall 2015-2018 and Analytic Geometry II, Spring 2016–2019, University of Dicle.

· Topology I, Fall 2016–2019, 2023, University of Dicle.

· Metric Spaces, Spring 2016–2019,2023, University of Dicle.

· Calculus I, II, 2019–2021, 2022-2024 University of Dicle.

AWARDS:

- Council of Higher Education of The Republic of Turkey, Ph.D Scholarship, January 2007-July 2011

- The Scientific and Technological Research Council of Turkey, International Postdoctoral Research Scholarship, August 2014-August 2015

- Fulbright Scholar, January 2022-July 2022

ACTIVITIES:

- Co-organizer of the conference *Young Researchers in Mathematics*, University of Liverpool, 2008.

- Co-organizer (responsible from preparing the conference booklet) of the 26.National Mathematics Conference, Dicle University, 4-7 September 2013.

- Scientific Coordinator for IMAGINARY-open mathematics exhibition, 9-24 November 2015.

- Co-organizer of the 5th Workshop of Association of Turkish Women in Maths, 5–7 July, 2018.

- Co-organizer of the Workshop of Curves, Mapping Class Groups and Their Applications, 17-18 January 2020.

- Reviewer for AMS mathematical reviews.

PROJECTS:

- Geometric intersection of curves on non–orientable surfaces, Tubitak 3001, 2018-2020 (Principal Investigator)

- Train track grafikleri ve örgülerin topolojik entropisi, DÜBAP, 2018-2020 (Principal Investigator)

- Algorithms for mapping class groups of non-orientable surfaces, Tubitak 1001, 2024- (Principal Investigator)

STUDENTS:

- Umut Güngörür (MSc, 2017-2019)

- Alev Meral (PhD, 2019)