

CURRICULUM VITAE

for Ferit Öztürk

May 2023

Address: Ferit Öztürk,
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Academic degrees

Professor in Topology, December 2016 in Boğaziçi University

Associate Professor in Topology, April 2010 in Boğaziçi University

Assistant Professor in Topology, 2005 in Boğaziçi University

PhD: Mathematics, Middle East Technical University, Ankara; 2001

Thesis title: *Generalised Thurston-Bennequin invariants of real algebraic curves and surfaces*

Supervisor: Prof. Sergey Finashin

MSc: Electrical and Electronics Engineering, Bilkent University, Ankara; 1993

Thesis title: *2-40 GHz MMIC Switches*

BSc: Double major, Bilkent University, Ankara; 1990

Electrical and Electronics Engineering, Physics

Academic positions

2016 - ... Professor

Boğaziçi University Mathematics Department, İstanbul

2010 - 2016 Associate Professor

Boğaziçi University Mathematics Department, İstanbul

2005 - 2010 Assistant Professor

Boğaziçi University Mathematics Department, İstanbul

2003 - 2005 Instructor

Boğaziçi University Mathematics Department, İstanbul

2003 Spring, Research associate

IPAM, Institute for Pure and Applied Mathematics, UCLA, USA

2001 - 2002, Postdoc

Centre de Mathématiques (CMAT), Ecole Polytechnique, Palaiseau, France

1994 - 1995, 1998 - 2001, Research assistant

Middle East Technical University Mathematics Department, Ankara

1990 - 1993, Research assistant

Bilkent University Electrical and Electronics Engineering, Ankara

Academic visits

2023 January-July, Visiting research associate, Erdős Center, Alfréd Rényi Institute of Mathematics, Budapest, Hungary

2022 September-December, Visiting CNRS position, Nantes Université, Nantes, France

2015 September-December, Visiting CNRS position, l'Institut Camille Jordan, Université Claude Bernard - Lyon I, France

2015 February-September, Visiting, I2M Aix-Marseille Université, Marseille, France

2011 January-February, Visiting, MATCUER UNAM, Cuernavaca, Mexico

2009 September-December, Research associate, Mathematisches Forschungsinstitut Oberwolfach, Germany

Research interests

Contact and symplectic topology; Real algebraic topology; Singularity theory; Dynamical systems in robotics

Invited talks (*in person*) - some recent

On the Legendrian simplicity of real links, in Topology of Algebraic Varieties, A Conference in Honor of the 60th Birthday of Anatoly Libgober; Jaca, Spain, June 2009

First steps in real contact topology, in Brussels-Cologne joint seminars on symplectic and contact geometry; Universität zu Köln, November 2009

There is a unique real tight 3-ball, in METU Topology weekend seminars; Ankara, December 2009

On the classification of real tight solid tori, in METU Topology weekend seminars; Ankara, April 2010

Real contact structures and real open books, MATCUER Colloquium; Cuernavaca, February 2011

Real Lefschetz fibrations and real open books, CIMAT; Guanajuato, February 2011

Stable Hamiltonian structures on singularity links, Indian Institute of Science; Bangalore, February 2013

From real S^3 to real 3-manifolds, Tropical Geometry in Europe Meeting, IMBM; Istanbul, April 2014

Real tight solid tori, Tropical Geometry in Europe Meeting, Berlin; March 30-31, 2015.

Contact invariant on the link of almost rational singularities, Geometry Seminars in ICJ, Lyon; October 9, 2015.

From real S^3 to real 3-manifolds, İstanbul University Math Department Colloquium, February 2016.

Contact invariant on the link of almost rational singularities, in METU Topology weekend seminars; Ankara, November 2016

Contact structures on almost rational singularity links, Geometry Seminars in The Institute of Mathematical Sciences, Chennai; January 24, 2017.

Real algebraic overtwisted contact structures on S^3 , Bosphorus Real Geometry Conference; IMBM, Istanbul, October 2019

Real contact 3-manifolds and isolated surface singularities, in METU Geometry-Topology seminars; Ankara, May 2021

Real algebraic overtwisted contact structures on the 3-sphere, in Nantes TGA seminars; Nantes, October 2022

Real contact structures on real 3-manifolds, in Nantes TGA seminars; Nantes, September 2022

Every real 3-manifold admits a real contact structure, in University of Geneva seminars *Fables de Géométrie*; Geneva, February 2023

Real contact topology: involutions and contact structures, in Erdős Center geometry seminars; Budapest, March 2023

Morse-Bott functions on classical Lie groups and a framed flow category, in Rényi Institute Topology Algebra and Geometry seminars; Budapest, May 2023

Conferences attended (*in person*) - some recent

Low dimensional 27-31 March 2023 at Rényi Institute, Budapest

Singularities 6-10 March 2023 at Rényi Institute, Budapest

Rencontres projet COSY, La convexité en géométrie de contact de grande dimension, 17-19 November 2022 at l'ENS, Paris

Real Aspects of Geometry, 31 October-4 November 2022 at CIRM, Marseille

25th Gökova Geometry-Topology Conference, May 2018, Turkey

23rd Gökova Geometry-Topology Conference, May 2016, Turkey

Flexibility and Contact Geometry, 4-16 December 2015 at Université Libre de Bruxelles
Recent Challenges in Contact Geometry, 8-12 June 2015 at CIRM, Marseille
Tropical Geometry in Europe Meeting, March 2015, Berlin
Geometry of Singular Spaces and Maps, 2-6 March 2015 at CIRM, Marseille
Real Singularities and Applications, February 2015 at CIRM, Marseille
Local and Global Invariants of Singularities, February 2015 at CIRM, Marseille
21st Gökova Geometry-Topology Conference, May 2014, Turkey
Tropical Geometry in Europe Meeting, April 2014, IMBM, Istanbul, Turkey

Conferences organized

I have organized many international conferences, workshops and summer schools at IMBM and in Boğaziçi University. Some notable ones are:

İstanbul Contact and Symplectic Topology Workshop, IMBM, May 2-6, 2011
26th National Mathematics Symposium, Dicle University, Diyarbakır, September 2013, member of the scientific committee
Low Dimensional Topology Workshop, IMBM, March 30, 2013
Turkish Women in Mathematics / Geometry–Topology Summer School, BÜ-IMBM, August 26-30, 2013
Tropical Geometry in Europe, IMBM, April 28-May 2, 2014
Contact and Symplectic Dynamics Day, IMBM, June 24, 2014
IMBM Geometry-Topology Meetings, 2014-2015
Topics in Geometry and Topology Meeting, IMBM, May 18-22, 2015
Mini Course on the Sandwiched Singularities, IMBM, November 2015
Topology and geometry in low degrees on the occasion of Sergey Finashin’s 60th birthday, IMBM, December 20-21, 2018
IMBM Arf Lectures 2012-2019
Mirror Symmetry for Looijenga Interiors and Beyond, IMBM and FGE, 25-29 July 2022

Recent projects and awards

TÜBİTAK-EEEAG Project No. 111E285 *A Hybrid (Local Spherical, Global Topological) Map Building and Reasoning Methodology for Multirobot Systems for Comprehensive Environmental Perception*, 2013-2015, Researcher

TÜBİTAK-ARDEB Project No. 109T671 *Three dimensional real contact manifolds and knots therein*, 2010-2013, Director

Boğaziçi Üniversitesi BAP Project No. 05HB601, *Sequential simultaneous motion: convergence properties in gradient projection systems*, 2005

Boğaziçi Üniversitesi ”Excellence in Teaching Award 2008”

Boğaziçi Üniversitesi "Academic Success Award" 2006, 2007, 2008, 2014

Other positions

Codirector of IMBM (Istanbul Center for Mathematical Sciences), 2012-2019

Member of the editor board for Matematik Dünyası, the official journal of Turkish Mathematical Society, 2009 - ...

Theses supervised

PHD

Merve Seyhun Cengiz, 2018, *Real Contact 3-manifolds Through Surgery*

Şeyma Karadereli, *Algebraic Splicing and Overtwisted Structures*

Turan Karakurt, *Morse-Bott Functions on Classical Groups*

MSc

Yasemin Kara, 2006, *Cohomology Groups of Mapping Class Groups*

Murat Sağlam, 2007, *Proof of the Weinstein Conjecture For Overtwisted Closed Contact 3-manifolds*

Semih Özlem, 2008, *First steps into Heegard Floer Homology*

Yusuf Gören, 2010, *Indices of Orbits in Contact Homology*

Sinan Eden, 2011, *Pseudo-Anosov Diffeomorphisms and the Monodromy of an Open Book*

Metin Özсарfati, 2011, *Denseness of Morse-Smale Systems on Surfaces*

Mustafa Cengiz, 2013, *Milnor Open Books and Milnor Fillable Contact Structures*

S. Erman Çineli, 2015, *Correspondence Theorem in Tropical Geometry*

Şeyma Karadereli, 2020, *Algebraic Overtwisted Structures on 3-Sphere*

Cem Yalım Özel, 2023 expected, *Real Convex Surfaces in Lens Spaces*

Courses taught

Calculus; Advanced Calculus; Mathematical Structures; Discrete Mathematics; Linear Algebra; Differential Equations; Group Theory; Rings, Fields and Galois Theory; Real Analysis; Numerical Analysis; Metric Spaces; Calculus on Manifolds; Calculus of Variations; Projective Geometry; Differential Topology; Geometric Topology; Algebraic Topology; Singularity Theory

ARTICLES – May 2023

“*Subdividing triangles with π -commensurable angles*”, with H. Korkmaz, submitted, 2023

“*Real algebraic overtwisted contact structures on 3-spheres*, with Ş. Karadereli, to appear in *Algeb Geom Top*, 2023

“*Real tight contact structures on lens spaces and surface singularities*, with S. Onaran, to appear in *Journal of Topology and Analysis*, 2022

“*Every real 3-manifold is real contact*, with M. Cengiz, *J Sympl Geom*, Volume 20, Number 6, 1313–1347, 2022

“*Morse-Bott functions on orthogonal groups*, with H.I. Bozma and W.D. Gillam, *Topology Appl.* 265 (2019), 106807

“*Contact structures on AR-singularity links*”, with Ç. Karakurt, *Int J Math*, Volume 29, Issue 3, 1850019 (2018)

“*Multi-robot realization based on goal adjacency constraints*” with D. Şenel, H. I. Bozma, ICRA 2018 (IEEE International Conference on Robotics and Automation).

“*Sequential gradient dynamics in real analytic Morse systems*”, with H. I. Bozma, *Dynamical Systems*, 2017, vol. 32, no. 2, 187–197

“*Finding optimal isomorphic goal adjacency*” with D. Şenel, H. I. Bozma, ICRA 2016 (IEEE International Conference on Robotics and Automation).

“*Real open books and real contact structures* with N. Salepci, *Advances in Geometry*, 2015; 15 (4): 415–431.

“*A real open book not fillable by a real Lefschetz fibration*” with N. Salepci, *Internat. J. Math.* (April 2014); 25 (4).

“*There is a unique real tight 3-ball*” with N. Salepci, *Int. Math. Res. Notices* 7 (2011), 1573–1596.

“*Klein geometries, parabolic geometries and differential equations of finite type*” with E. Abadoglu and E. Ortaçgil, *J. of Lie Theory*. 18 (2008), no. 1, 67–82.

“Brieskorn manifolds as contact branched covers of spheres” with K. Niederkrüger, Period. Math. Hungar. 54 (2007), no. 1, 85–97.

“Generalised Thurston-Bennequin invariants for real algebraic surface singularities” Manuscripta Mathematica 117 (2005), 27–298.

PREPRINTS

“Group extensions in second order jet group”, with B. Gürel and E. Ortaçgil, permanent preprint, 2006.