

# Ayberk ZEYTİN

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CONTACT INFORMATION Matematik Bölümü  
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Çırağan Caddesi No.36  
Ortaköy Beşiktaş 34349 *www:* <http://math.gsu.edu.tr/azeytin/>  
İstanbul - Turkey

## POSITIONS HELD

- **Galatasaray University**  
Assist. Prof., Mathematics, Feb., 2014 - present  
Instructor, Mathematics, Oct., 2012 - Feb. 2014
- **Middle East Technical University - NCC**  
Instructor, Mathematics, Feb., 2012 - Jun. 2012

## EDUCATION

**Galatasaray University**, İstanbul, Turkey  
Post-Doc, Mathematics, August 2011 - October - 2012  
**Middle East Technical University**, Ankara, Turkey  
Ph.D. on B.S., Mathematics, September 2005 - August 2011  
B.S., Mathematics, June 2005

## SELECTED TALKS

- Picard group of a real quadratic number field and geodesics in upper half plane, October 2017, The Second Romanian - Turkish Mathematics Colloquium, Turkey
- Combinatorics of relative quadratic extensions, June 2017, CIMPA-ICTP research school on Artin L-functions, Artin's primitive roots conjecture and applications, Turkey
- Class number problems and Lang conjectures, October 2015, The First Romanian - Turkish Mathematics Colloquium, Romania
- Modular group, dessins and binary quadratic forms, May 2014, Master Class : Around Thurston-Grothendieck-Teichmüller theories, Strasbourg, France
- Solving representation problem of binary quadratic forms, June 2013, Algebraic Geometry and Number Theory, İstanbul, Turkey
- Polygonal Decompositions, ball quotients and Belyi maps, November 2013, Japanese Turkish Joint Geometry Meeting, İstanbul, Turkey
- Binary Quadratic Forms and Teichmüller Spaces, October 2012, Istanbul Workshop on Teichmüller Theory, Istanbul, Turkey
- Reduction theory of binary quadratic forms via dessins, September 2012, Groups and Riemann Surfaces, Madrid, Spain
- Parametrizing Arithmetic Curves, Jan. 2011, İzmir Algebraic and Geometric Topology Days, İzmir, Turkey
- colloquiums at: Bilgi University, Mimar Sinan Fine Arts University, İstanbul University, Johann Wolfgang Goethe Universität, Boğaziçi University, Koç University, İstanbul Technical University, University of Sheffield, Middle East Technical University.

PUBLICATIONS &  
PREPRINTS

- Quadrangulations of sphere and ball quotients, with M. Uludağ, Math. Nach. 287 (2014), no. 1, 105121. DOI: 10.1002/mana.201200174
- On reduction theory of binary quadratic forms, Publ. Math. Debrecen 89 (2016), 203221. DOI: 10.5486/PMD.2016.7470
- Binary Quadratic Forms as Dessins, with M.Uludağ, M. Durmuş, J. Théor. Nombres Bordx. 29 (2017), no. 2, 445469. DOI: 10.5802/jtnb.987
- A panorama of the fundamental group of the modular orbifold, with M. Uludağ, in *Handbook of Teichmüller Theory, IRMA Lectures in Mathematics and Theoretical Physics*, no. VI, European Mathematical Society, 2016, pp. 501519. DOI: 10.4171/161-1/16
- Multivariate Lucas polynomials and ideal classes in quadratic number fields, in Turk. J. Math., 42: 1543–1555, 2018. DOI: 10.3906/mat-1608-65
- Class number problems and çark hypersurfaces, in Algebraic Geometry and Number Theory: Lecture Notes of a CIMPA-Clay Mathematics Institute Summer School held at Galatasaray University DOI: 10.1007/978-3-319-47779-4\_7
- Algebraic geometry and number theory. Summer school, Galatasaray University, Istanbul, Turkey, June 213, 2014., co-editor, with H. Mourtada, C.C. Sarioğlu and C. Soulé, Basel: Birkhäuser/Springer, 2017. DOI: 10.1007/978-3-319-47779-4
- Belyi Lattès maps, *submitted*
- Çark Groupoids and Thompson’s Groups, with M.Uludağ, *ongoing*
- Binary Forms and Euclidean Bianchi Groups, with M.H.Şengün, *ongoing*
- Hecke groups, binary quadratic forms and their reduction, *ongoing*
- Selberg zeta function of a Bianchi manifold as a Fredholm determinant, with M. Fraczek, B. Mesland, M.H. Şengün, *ongoing*

AWARDS /  
PROJECTS

The Scientific and Technological Research Council of Turkey(TÜBİTAK)

- 1001 - Scientific and Technological Research Project: “Generalized Çarks And Binary Quadratic Forms”, 2015 - 2018.
- 3501 - Career Grant: “Info-Mod”, 2013 - 2016.
- 2221 - Fellowships for Visiting Scientists Programme, visitor: Jürgen Wolfart (Goethe Universität - Frankfurt)
- 2211 - National Scholarship for PhD Students, 2005 - 2010.
- 2214 - International Research Fellowship, 2009.

Galatasaray University (GSU)

- GSU Research Grant: “Arithmetic of Quadratic Forms”, 2017-2019
- GSU Research Grant: “Class Number Problems and Lang Conjectures”, 2013-2016.

CO-ORGANIZED  
(SELECTION)

- *31ième Journées Arithmétiques*, İstanbul, Turkey **July 2019**
- *31st National Mathematics Symposium*, Erzincan, Turkey **September 2018**
- *30th National Mathematics Symposium*, Ankara, Turkey **September 2017**
- *2nd Caucasian Mathematics Conference*, Van, Turkey **August 2017**
- *29th National Mathematics Symposium*, Mersin, Turkey **August 2016**
- *Arithmetic and Low Dimensional Hyperbolic Spaces*, İstanbul, Turkey **June 2016**
- *Algebraic Geometry and Number Theory*, İstanbul, Turkey **June 2014**
- *Finsler Geometry and Applications*, İstanbul, Turkey **April 2014**
- *Geometry and Arithmetic around Teichmüller Theory*, İstanbul, Turkey **October 2011**

SELECTED

SCIENTIFIC VISITS

- Max Planck Institut für Mathematik (MPIM) July - August 2018  
 Institut des Hautes Études Scientifiques (IHÉS) January 2016  
 University of Sheffield, School of Mathematics and Statistics October 2014, April 2015, February 2018, *Host: M. Haluk Şengün*  
 International Centre for Theoretical Physics (ICTP) June 2006, June 2008, June 2012  
 Departamento de Matemáticas, Universidad Autónoma de Madrid Feb. 2012, *Host: Gabino Gonzalez-Diez*  
 Institut für Mathematik, Johann Wolfgang Goethe Universität August 2009 - August 2010, *Host: Prof. Jürgen Wolfart*

TEACHING

EXPERIENCE

**Galatasaray University**, İstanbul, Turkey

- Undergraduate (in French)
  - Math 115 - Fundamentals of Mathematics *2013 Fall, 2014 Fall, 2017 Fall*
  - Math 201 - Multivariable Analysis *2018 Fall*
  - Math 204 - Abstract Algebra *2017 Spring, 2018 Spring*
  - Math 325 - Complex Analysis *2015 Spring, 2016 Spring*
  - Math 364 - Introduction to Number Theory *2014 Spring*
  - Math 371 - Selected Topics *2013 Fall, 2015 Fall*
  - Math 417 - Differential Geometry *2013 Spring, 2014 Spring*
  - Math 452 - Introduction to Functional Analysis *2015 Fall, 2016 Fall*
  - Math 468 - Field Theory *2013 Spring*
- Graduate (in English)
  - Math 501 - Advanced Analysis *2015 Fall*
  - Math 504 - Advanced Algebra *2017 Fall, 2018 Fall*
  - Math 511 - Algebraic Number Theory *2016 Spring*
  - Math 516 - Modular Forms *2016 Fall*
  - Math 530 - Selected Topics in Algebra *2017 Spring*
  - Math 532 - Selected Topics in Algebraic Geometry *2018 Spring*

**Koç University**, İstanbul, Turkey

- Undergraduate (in English)
  - Math 101 - Finite Mathematics *2014 Spring, 2015 Fall, 2018 Fall*
  - Math 106 - Calculus I *2015 Spring, 2016 Fall*
  - Math 203 - Multivariable Calculus *2014 Spring, 2016 Spring, 2017 Spring, 2018 Spring*

ADVISOR

Senior projects, **Galatasaray University**

- Yasemin Özçelik *ongoing* 2017
- Begüm Gülşah Çaktı, Hamide Kuru, Beyza Küçükdağ 2016
- Gülşah Bakı, Gökhan Özcan, Melike Saral 2015
- Meltem Akgün 2013
- Ecem Keskin 2012
- İrem Portakal 2010

Master of Science, **Galatasaray University**

- Şahan İzgi, *Title: Theta functions of indefinite binary quadratic forms, September 2017*
- Melike Efe, *Title: Classification of Lattès maps, June 2017*

SELECTED

PROFESSIONAL  
SERVICE

- Referee for Turkish Journal of Mathematics, Hacettepe Journal of Mathematics and Statistics
- Reviewer for AMS, Zentralblatt MATH and Springer
- Member of the editorial board of “Matematik Dünyası”, a popular mathematics magazine in Turkish
- Member of the executive board of Turkish Mathematical Society
- Member of the executive board of Graduate School of Science and Engineering of Galatasaray Univ.

MATHEMATICAL  
TOOLS

Mathematica, GAP, PARI/gp, Sage.

FOREIGN  
LANGUAGES

- Turkish(mother tongue)
- English(fluent)
- German(B2-Level)
- French(B1-Level)

REFERENCES

available upon request