

## Prof. YAŞAR SÖZEN

### Personal Information

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**Address:** Hacettepe Üniversitesi Fen Fakültesi Matematik Bölümü 06800 Beytepe - Ankara, TÜRKİYE

### Education Information

Doctorate, University of Southern California, Fen Bilimleri Enstitüsü, Matematik , United States Of America 1996 - 2000

Postgraduate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Matematik , Turkey 1993 - 1996

Undergraduate, Middle East Technical University, Fen Fakültesi, Matematik , Turkey 1989 - 1993

### Foreign Languages

English, C1 Advanced

### Dissertations

Doctorate, The Weil-Petersson and Thurston Symplectic Forms, University Of Southern California, Matematik Bölümü, 2000

Postgraduate, Characterization of quasideagonal isomorphisms between some types of kohte spaces, Orta Doğu Teknik Üniversitesi, Fen-Edebiyat Fakültesi, Restoratif Diş Tedavisi A.B.D., 1996

### Research Areas

Mathematics, Algebraic Topology, Geometry, Manifolds and Cell Complexes, Natural Sciences

### Academic Titles / Tasks

Professor, Hacettepe University, Fen Fakültesi, Matematik Bölümü, 2014 - Continues

Associate Professor, Hacettepe University, Fen Fakültesi, Matematik Bölümü, 2013 - 2014

Associate Professor, Fatih Üniversitesi, Faculty Of Arts And Sciences, Department Of Mathematics, 2008 - 2013

Assistant Professor, Fatih Üniversitesi, Faculty Of Arts And Sciences, Department Of Mathematics, 2005 - 2008

Assistant Professor, Rowan University, Fen-Edebiyat, Matematik, 2004 - 2005

Assistant Professor, University of Connecticut, Fen-Edebiyat, Matematik, 2001 - 2004

Assistant Professor, University of Georgia, Fen-Edebiyat, Matematik, 2000 - 2001

Research Assistant, University of Southern California, Fen-Edebiyat, Matematik, 1996 - 2000

Research Assistant, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Mathematics, 1993 - 1996

## Academic and Administrative Experience

Hacettepe Üniversitesi, Fen Fakültesi, Matematik Bölümü, 2015 - 2016

Hacettepe Üniversitesi, Fen Fakültesi, Matematik Bölümü, 2014 - 2016

Hacettepe Üniversitesi, Fen Fakültesi, Matematik Bölümü, 2013 - 2014

## Courses

CEBİRSEL TOPOLOJİYE GİRİŞ, Undergraduate, 2016 - 2017

GEOMETRİDE SEÇME KONULAR I, Doctorate, 2016 - 2017

HİPERBOLİK GEOMETRİYE GİRİŞ, Undergraduate, 2016 - 2017

GENEL TOPOLOJİ, Undergraduate, 2016 - 2017

## Supervised Theses

SÖZEN Y., Fractional spaces generated by positive differential operators with the nonlocal condition, Doctorate, N.NALBANT(Student), 2016

SÖZEN Y., Reidemeister torsiyon ve yönlendirilmiş yüzeylerin pantolon parçalanışı, Postgraduate, E.DİRİCAN(Student), 2015

SÖZEN Y., Fractional spaces generated by positive operators in the half-space, Doctorate, S.AKTÜRK(Student), 2014

SÖZEN Y., Structure of the fractional spaces generated by positive operators and applications, Postgraduate, N.NALBANT(Student), 2011

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Numerical approaches for solution of hyperbolic difference equations on circle**  
Ashyralyev A., Hezenci F., SÖZEN Y.  
Georgian Mathematical Journal, 2024 (SCI-Expanded)
- II. **A Note on Stability of Parabolic Difference Equations on Torus**  
Ashyralyev A., Hezenci F., SÖZEN Y.  
Numerical Functional Analysis and Optimization, vol.44, 2023 (SCI-Expanded)
- III. **Representation variety of free or surface groups and Reidemeister torsion**  
Hezenci F., SÖZEN Y.  
TURKISH JOURNAL OF MATHEMATICS, vol.46, pp.1408-1423, 2022 (SCI-Expanded)
- IV. **On Reidemeister torsion of flag manifolds of compact semisimple Lie groups**  
Ozel C., Basbaydar H., SÖZEN Y., YILMAZ E., Lee J. R., Park C.  
AIMS MATHEMATICS, vol.5, no.6, pp.7562-7581, 2020 (SCI-Expanded)
- V. **A note on exceptional groups and Reidemeister torsion**  
Hezenci F., SÖZEN Y.  
JOURNAL OF MATHEMATICAL PHYSICS, vol.59, no.8, 2018 (SCI-Expanded)
- VI. **REIDEMEISTER TORSION AND ORIENTABLE PUNCTURED SURFACES**  
Dirican E., SÖZEN Y.  
JOURNAL OF THE KOREAN MATHEMATICAL SOCIETY, vol.55, no.4, pp.1005-1018, 2018 (SCI-Expanded)
- VII. **Connected sum of orientable surfaces and Reidemeister torsion**  
Dirican E., SÖZEN Y.  
PURE AND APPLIED MATHEMATICS QUARTERLY, vol.12, no.4, pp.517-541, 2016 (SCI-Expanded)
- VIII. **A note on Reidemeister torsion and pleated surfaces**  
SÖZEN Y.

JOURNAL OF KNOT THEORY AND ITS RAMIFICATIONS, vol.23, no.3, 2014 (SCI-Expanded)

- IX. **Structure of fractional spaces generated by second order difference operators**  
Ashyralyev A., Nalbant N., Sozen Y.  
JOURNAL OF THE FRANKLIN INSTITUTE-ENGINEERING AND APPLIED MATHEMATICS, vol.351, no.2, pp.713-731, 2014 (SCI-Expanded)
- X. **The structure of fractional spaces generated by a two-dimensional elliptic differential operator and its applications**  
Ashyralyev A., Akturk S., Sozen Y.  
BOUNDARY VALUE PROBLEMS, 2014 (SCI-Expanded)
- XI. **Finite Difference Method for the Reverse Parabolic Problem**  
ASHYRALYEV C., DURAL A., Sozen Y.  
ABSTRACT AND APPLIED ANALYSIS, 2012 (SCI-Expanded)
- XII. **SYMPLECTIC CHAIN COMPLEX AND REIDEMEISTER TORSION OF COMPACT MANIFOLDS**  
Sozen Y.  
MATHEMATICA SCANDINAVICA, vol.111, no.1, pp.65-91, 2012 (SCI-Expanded)
- XIII. **Reidemeister torsion of product manifolds and its applications to quantum entanglement**  
Ozel C., Sozen Y.  
BALKAN JOURNAL OF GEOMETRY AND ITS APPLICATIONS, vol.17, no.2, pp.66-76, 2012 (SCI-Expanded)
- XIV. **On a volume element of a Hitchin component**  
Sozen Y.  
FUNDAMENTA MATHEMATICAE, vol.217, no.3, pp.249-264, 2012 (SCI-Expanded)
- XV. **A note on the parabolic equation with an arbitrary parameter at the derivative**  
Ashyralyev A., Sozen Y.  
MATHEMATICAL AND COMPUTER MODELLING, vol.54, pp.2565-2572, 2011 (SCI-Expanded)
- XVI. **A note on reidemeister torsion and period matrix of Riemann surfaces**  
Sozen Y.  
MATHEMATICA SLOVACA, vol.61, no.1, pp.29-38, 2011 (SCI-Expanded)
- XVII. **Well-posedness of parabolic differential and difference equations**  
Ashyralyev A., Sozen Y.  
COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.60, no.3, pp.792-802, 2010 (SCI-Expanded)
- XVIII. **ON QUASI-DIAGONAL ISOMORPHISMS OF INFINITE AND FINITE TYPE DRAGILEV KOTHE SPACES**  
Sozen Y.  
INDIAN JOURNAL OF PURE & APPLIED MATHEMATICS, vol.40, no.5, pp.295-314, 2009 (SCI-Expanded)
- XIX. **On Fubini-Study form and Reidemeister torsion**  
Sozen Y.  
TOPOLOGY AND ITS APPLICATIONS, vol.156, no.5, pp.951-955, 2009 (SCI-Expanded)
- XX. **Ideal cell-decompositions for a hyperbolic surface and Euler characteristic**  
Sozen Y.  
JOURNAL OF THE KOREAN MATHEMATICAL SOCIETY, vol.45, no.4, pp.965-976, 2008 (SCI-Expanded)
- XXI. **Reidemeister torsion of a symplectic complex**  
Sozen Y.  
OSAKA JOURNAL OF MATHEMATICS, vol.45, no.1, pp.1-39, 2008 (SCI-Expanded)
- XXII. **A note on the parabolic differential and difference equations**  
ASHYRALYEV A., Sozen Y., SOBOLEVSKII P. E.  
ABSTRACT AND APPLIED ANALYSIS, 2007 (SCI-Expanded)
- XXIII. **Variation of the Liouville measure of a hyperbolic surface**  
BONAHON F., Sozen Y.  
ERGODIC THEORY AND DYNAMICAL SYSTEMS, vol.23, pp.729-758, 2003 (SCI-Expanded)
- XXIV. **The Weil-Petersson and Thurston symplectic forms**  
Sozen Y., BONAHON F.  
DUKE MATHEMATICAL JOURNAL, vol.108, no.3, pp.581-597, 2001 (SCI-Expanded)

## Articles Published in Other Journals

- I. **A remark on Schottky representations and Reidemeister torsion Шоттки көрсетілімі мен Рейдмейстер бұралыуы жайында ескерту Замечание о представлениях Шоттки и кручении Рейдемейстера**  
Hezenci F., SÖZEN Y.  
Bulletin of the Karaganda University. Mathematics Series, vol.109, no.1, pp.81-93, 2023 (Scopus)
- II. **Reidemeister-Franz torsion of compact orientable surfaces via pants decomposition**  
Erdal E., SÖZEN Y.  
Balkan Journal of Geometry and its Applications, vol.27, no.2, pp.37-49, 2022 (Scopus)

## Refereed Congress / Symposium Publications in Proceedings

- I. **A Note on Parabolic Difference Equations on Manifold**  
Ashyralyev A., Hezenci F., SÖZEN Y.  
5th International Conference of Mathematical Sciences, ICMS 2021, İstanbul, Turkey, 23 - 27 June 2021, vol.2483
- II. **A Note on Hyperbolic Differential Equations on Manifold**  
Ashyralyev A., SÖZEN Y., Hezenci F.  
5th International Conference on Analysis and Applied Mathematics (ICAAM), Mersin, Turkey, 23 - 30 September 2020, vol.2325
- III. **A Note on Parabolic Differential Equations on Manifold**  
Ashyralyev A., SÖZEN Y., Hezenci F.  
4th International Conference of Mathematical Sciences (ICMS), ELECTR NETWORK, 17 - 21 June 2020, vol.2334
- IV. **Reidemeister torsion of Anasov representations**  
Jafar H. D., SÖZEN Y.  
International Conference on Advancements in Mathematical Sciences (AMS), Antalya, Turkey, 5 - 07 November 2015, vol.1676
- V. **Reidemeister torsion of some surfaces**  
Dirican E., SÖZEN Y.  
International Conference on Advancements in Mathematical Sciences (AMS), Antalya, Turkey, 5 - 07 November 2015, vol.1676
- VI. **Finite Difference Method for The Reverse Parabolic Problem with Neumann Condition**  
ASHYRALYYEV C., DURAL A., Sozen Y.  
1st International Conference on Analysis and Applied Mathematics (ICAAM), Gümüşhane, Turkey, 18 - 21 October 2012, vol.1470, pp.102-105
- VII. **Reidemeister Torsion of Hitchin Representations of  $PSp(2n)(\mathbb{R})$**   
Sozen Y.  
International Conference of Numerical Analysis and Applied Mathematics (ICNAAM), Kos, Greece, 19 - 25 September 2012, vol.1479, pp.570-573
- VIII. **Positivity of Two-Dimensional Elliptic Differential Operators in Holder Spaces**  
Ashyralyev A., Akturk S., Sozen Y.  
1st International Conference on Analysis and Applied Mathematics (ICAAM), Gümüşhane, Turkey, 18 - 21 October 2012, vol.1470, pp.77-79
- IX. **The Positivity of Differential Operator with Nonlocal Boundary Conditions**  
Nalbant N., Sozen Y.  
International Conference of Numerical Analysis and Applied Mathematics (ICNAAM), Kos, Greece, 19 - 25 September 2012, vol.1479, pp.578-581
- X. **The Structure of Fractional Spaces Generated by the Difference Operator on the Half Plane**  
Akturk S., Sozen Y.  
International Conference of Numerical Analysis and Applied Mathematics (ICNAAM), Kos, Greece, 19 - 25

September 2012, vol.1479, pp.611-614

**XI. C-Symplectic Complex and Riedemeister Torsion**

Sozen Y.

1st International Conference on Analysis and Applied Mathematics (ICAAM), Gümüşhane, Turkey, 18 - 21 October 2012, vol.1470, pp.262-265

**XII. Positivity of Two-Dimensional Elliptic Differential Operators with Nonlocal Conditions**

Ashyralyev A., Kaplan S., Sozen Y.

International Conference on Numerical Analysis and Applied Mathematics (ICNAAM), Halkidiki, Greece, 19 - 25 September 2011, vol.1389

**XIII. A NOTE ON SYMPLECTIC CHAIN COMPLEX**

Sozen Y.

International Conference on Mathematical Sciences, Bolu, Turkey, 23 - 27 November 2010, vol.1309, pp.870-883

## Supported Projects

SÖZEN Y., Project Supported by Higher Education Institutions, Anasov Temsilleri ve Reidemeister Torsiyon, 2015 - 2015

SÖZEN Y., Project Supported by Higher Education Institutions, Klasik ve kuantum hiperbolik geometry ve topoloji, 2015 - 2015

KADILAR C., SÖZEN Y., KARASOY D., Project Supported by Higher Education Institutions, Fen Fakültesi Kariyer Günleri ve Bilim Şenliği İstatistik, Matematik ve Aktüerya Projeleri, 2015 - 2015

SÖZEN Y., TUBITAK Project, Hitchin komponentin üçgen ve kesme değişmezlerinde Atiyah Bott Goldman simplektik biçimi, 2014 - 2014

SÖZEN Y., TUBITAK Project, Reidemeister Torsion Symplectic Chain Complexes and Applications to 3 Manifolds, 2012 - 2013

## Metrics

Publication: 39

Citation (WoS): 192

Citation (Scopus): 162

H-Index (WoS): 9

H-Index (Scopus): 8

## Non Academic Experience

Fatih Üniversitesi Matematik Bölümü, Doç. Dr.

Fatih Üniversitesi Matematik Bölümü, Yrd. Doç. Dr.

Rowan Üniversitesi, ABD, Matematik Bölümü, Ziyaretçi Yard. Doç. Dr.

Connecticut Üniversitesi, ABD, Matematik Bölümü, Ziyaretçi Yard. Doç. Dr.

Georgia Üniversitesi, ABD, Matematik Bölümü, Ziyaretçi Yard. Doç. Dr.

Güney Kalifornia Üniversitesi Matematik Bölümü, Araştırma Görevlisi

Orta Doğu Teknik Üniversitesi Matematik Bölümü, Araştırma Görevlisi