

## Asst. Prof. BETÜL HIÇDURMAZ

### Personal Information

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### Education Information

Doctorate, Gebze Yüksek Teknoloji Enstitüsü, Fen Bilimleri Enstitüsü, Matematik, Turkey 2011 - 2015

Doctorate, Yeditepe Üniversitesi, Fen Bilimleri Enstitüsü, Matematik, Turkey 2010 - 2011

Postgraduate, Fatih Üniversitesi, Fen Bilimleri Enstitüsü, Matematik, Turkey 2009 - 2010

Undergraduate, Fatih Üniversitesi, Fen Edebiyat Fakültesi, Matematik, Turkey 2004 - 2008

### Foreign Languages

English, C1 Advanced

### Dissertations

Doctorate, Initial Boundary Value Problems for Fractional Schrödinger Differential Equations, Gebze Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Matematik, 2015

Postgraduate, Fractional Schrödinger Differential Equations, Fatih Üniversitesi, Fen Bilimleri Enstitüsü, Matematik, 2010

### Research Areas

Mathematics, Functional Equations, Functional Analysis, Partial Differential Equations, Numerical Analysis, Natural Sciences

### Academic Titles / Tasks

Assistant Professor, Istanbul Medeniyet University, Faculty of Engineering and Natural Sciences , Mathematics Department , 2017 - Continues

Research Assistant PhD, İstanbul Medeniyet Üniversitesi, Faculty of Science, Matematik, 2015 - 2017

Research Assistant, Gebze Technical University, Faculty Of Basic Sciences, Department Of Mathematics, 2012 - 2015

Research Assistant, Istanbul Medeniyet University, Faculty Of Engineering And Natural Sciences , Mathematics , 2011 - 2012

Research Assistant, Yeditepe Üniversitesi, Fen Fakültesi, Matematik, 2010 - 2011

### Academic and Administrative Experience

Deputy Head of Department, Istanbul Medeniyet University, Faculty Of Engineering And Natural Sciences , Mathematics ,

2018 - Continues

## Courses

Analytical Methods in Engineering, Undergraduate, 2017 - 2018  
Linear Algebra, Undergraduate, 2018 - 2019  
Calculus II, Undergraduate, 2017 - 2018, 2018 - 2019  
Diferansiyel Denklemler, Undergraduate, 2018 - 2019  
Matlab ile Sayısal Analiz, Postgraduate, 2018 - 2019  
Diferansiyel Denklemler, Undergraduate, 2018 - 2019  
Calculus II, Undergraduate, 2017 - 2018  
Diferansiyel Denklemler, Undergraduate, 2017 - 2018  
Analytical Methods in Engineering, Undergraduate, 2016 - 2017  
Matematik II, Undergraduate, 2016 - 2017

## Advising Theses

Hiçdurmaz B., KESİRLİ TÜREVLİ ARAÇLARININ VERİ BİLİMİNDE UYGULANMASI, Postgraduate, A.Erdem(Student), Continues  
Hiçdurmaz B., Lineer optimizasyonun tarımda kar amacı için kullanımı, Postgraduate, İ.Esen(Student), Continues  
Hiçdurmaz B., Makine Öğrenmesi Yöntemleri ile Telsiz Yayınlarının Ayırıştırılması, Postgraduate, Ö.Güneş(Student), Continues

## Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Bounded solutions of second order of accuracy difference schemes for semilinear fractional schrödinger equations**  
Ashyralyev A., HİÇDURMAZ B.  
Fractional Calculus and Applied Analysis, vol.23, no.6, pp.1723-1761, 2021 (Journal Indexed in SCI)
- II. **Finite difference schemes for time-fractional Schrodinger equations via fractional linear multistep method**  
HİÇDURMAZ B.  
INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS, 2020 (Journal Indexed in SCI)
- III. **Multidimensional problems for nonlinear fractional Schrodinger differential and difference equations**  
Ashyralyev A., HİÇDURMAZ B.  
MATHEMATICAL METHODS IN THE APPLIED SCIENCES, 2019 (Journal Indexed in SCI)
- IV. **A STABLE SECOND ORDER OF ACCURACY DIFFERENCE SCHEME FOR A FRACTIONAL SCHRODINGER DIFFERENTIAL EQUATION**  
Ashyralyev A., Hicdurmaz B.  
APPLIED AND COMPUTATIONAL MATHEMATICS, vol.17, no.1, pp.10-21, 2018 (Journal Indexed in SCI)
- V. **On the Stability of Time-Fractional Schrodinger Differential Equations**  
HİÇDURMAZ B., Ashyralyev A.  
NUMERICAL FUNCTIONAL ANALYSIS AND OPTIMIZATION, vol.38, no.10, pp.1215-1225, 2017 (Journal Indexed in SCI)
- VI. **A stable numerical method for multidimensional time fractional Schrodinger equations**  
HİÇDURMAZ B., Ashyralyev A.  
COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.72, no.6, pp.1703-1713, 2016 (Journal Indexed in SCI)

- VII. **On the numerical solution of fractional Schrodinger differential equations with the Dirichlet condition**  
Ashyralyev A., HİÇDURMAZ B.  
INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS, vol.89, pp.1927-1936, 2012 (Journal Indexed in SCI)
- VIII. **A note on the fractional Schrodinger differential equations**  
Ashyralyev A., Hicdurmaz B.  
KYBERNETES, vol.40, pp.736-750, 2011 (Journal Indexed in SCI)

### Articles Published in Other Journals

- I. **Finite difference method for a nonlinear fractional Schrödinger equation with Neumann condition**  
Hiçdurmaz B.  
e-Journal of Analysis and Applied Mathematics, vol.2020, no.1, pp.67-80, 2020 (Refereed Journals of Other Institutions)
- II. **Numerical analysis for coupled systems of two-dimensional time-space fractional Schrödinger equations with trapping potentials**  
Hiçdurmaz B.  
Balıkesir Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.22, no.1, pp.1-12, 2020 (National Refereed University Journal)
- III. **Multidimensional problems for general coupled systems of time-space fractional Schrodinger equations**  
HİÇDURMAZ B.  
JOURNAL OF COUPLED SYSTEMS AND MULTISCALE DYNAMICS, vol.6, no.2, pp.147-153, 2018 (Journal Indexed in ESCI)
- IV. **On the numerical solution of a fractional population growth model**  
HİÇDURMAZ B., Can E.  
TBILISI MATHEMATICAL JOURNAL, vol.10, no.1, pp.269-278, 2017 (Journal Indexed in ESCI)
- V. **A Novel Numerical Method for Fuzzy Boundary Value Problems**  
Can E., Bayrak M. A. , HİÇDURMAZ B.  
Journal of Physics: Conference Series, pp.1-10, 2016 (Refereed Journals of Other Institutions)

### Refereed Congress / Symposium Publications in Proceedings

- I. **Multi-dimensional Problems for General Coupled Systems of Time-Space Fractional Schrödinger Equations**  
Hiçdurmaz B.  
ICRAPAM 2019, İstanbul, Turkey, 12 - 15 June 2019, pp.1
- II. **On the Numerical Analysis of a Nonlinear Fractional Schrodinger Equation with Neumann Boundary Condition**  
HİÇDURMAZ B.  
3rd International Conference of Mathematical Sciences (ICMS), İstanbul, Turkey, 4 - 08 September 2019, vol.2183
- III. **On Modified FLMM Methods for Fractional Population Equations**  
HİÇDURMAZ B., Can E.  
International Conference on Recent Advances in Pure and Applied Mathematics, Aydın, Turkey, 11 May 2017, pp.100
- IV. **Numerical Solution of Unknown Spacewise Dependent Coefficient in a Parabolic Equation**  
Can E., Golyayoglu Fatullayev A., Bayrak M. A. , HİÇDURMAZ B.  
Proceedings of Mathematics and Educational Symposium of Department of Mathematics and Computer Science, Bükreş, Romania, 28 May 2016, pp.1

- V. **New Numerical Approximations for the Nonlinear Population Model**  
 HİÇDURMAZ B., Can E.  
 ICRAPAM 2016, Muğla, Turkey, 19 May 2016, pp.163
- VI. **Some new numerical approximations for time fractional Schrodinger equations**  
 HİÇDURMAZ B.  
 ICRAPAM 2016, Muğla, Turkey, 19 May 2016, pp.162
- VII. **On The Numerical Solution of Time Fractional Schrödinger Differential Equations**  
 HİÇDURMAZ B.  
 ICPAM 2015, Roma, Italy, 16 July 2015, pp.1
- VIII. **On the Stability Analysis for Time Fractional Schrodinger Differential Equations**  
 HİÇDURMAZ B.  
 ICRAPAM 2015, İstanbul, Turkey, 03 June 2015, pp.1
- IX. **A Second Order of Accuracy Difference Scheme for a Fractional Schrodinger Differential Equation**  
 HİÇDURMAZ B.  
 ICRAPAM 2014, Antalya, Turkey, 06 November 2014, pp.1
- X. **Stability of Difference Schemes for Time Fractional Schrodinger Differential Equation**  
 HİÇDURMAZ B.  
 5th Congress of Mathematicians of Macedonia, Ohrid, Macedonia, 24 September 2014, pp.1
- XI. **Fractional Schrödinger differential equation and its stability**  
 HİÇDURMAZ B.  
 3rd International Conference on Applied Analysis and Mathematical Modelling, İstanbul, Turkey, 02 June 2013, pp.1
- XII. **Stable Difference Schemes for the Fractional Schrodinger Differential Equation**  
 HİÇDURMAZ B.  
 International Conference of Numerical Analysis and Applied Mathematics, Kos, Greece, 19 September 2012, pp.574-576
- XIII. **A Study on Difference Schemes of a Fractional Schrödinger Differential Equation**  
 HİÇDURMAZ B.  
 11th International Workshop on Dynamical Systems and Applications, Ankara, Turkey, 26 June 2012, pp.23
- XIV. **A Note on the Numerical Solution of Fractional Schrodinger Differential Equations**  
 Ashyralyev A., Hicdurmaz B.  
 1st International Conference on Analysis and Applied Mathematics (ICAAM), Gümüşhane, Turkey, 18 - 21 October 2012, vol.1470, pp.92-94

## Supported Projects

CAN E., HİÇDURMAZ B., Project Supported by Higher Education Institutions, Doğrusal Olmayan Diferansiyel Denklemlerin Geliştirilmiş Sayısal Çözümleri Ve Uygulamaları, 2016 - 2016

## Scientific Refereeing

Computers & Mathematics with Applications, SCI Journal, January 2016  
 FILOMAT, SCI Journal, January 2016  
 Proceeding of American Institute of Physics, SCI Journal, February 2015  
 Boundary Value Problems, SCI Journal, April 2014

## Edit Congress and Symposium Activities

EU COST Training School, Attendee, İstanbul, Turkey, 2018  
ICAME 2018, Attendee, Balıkesir, Turkey, 2018  
ICRAPAM 2017, Attendee, Aydın, Turkey, 2017  
ICRAPAM 2016, Attendee, Muğla, Turkey, 2016  
ICPAM, Attendee, Roma, Italy, 2015  
ICRAPAM 2015, Attendee, İstanbul, Turkey, 2015  
ICRAPAM 2014, Attendee, Antalya, Turkey, 2014  
Congress of Macedonian Mathematicians, Attendee, Ohrid, Macedonia, 2014  
(ICAAMM, Attendee, İstanbul, Turkey, 2013  
ICAAM 2012, Attendee, Gümüşhane, Turkey, 2012  
International Conference of Numerical Analysis and Applied Mathematics, Attendee, --Seçiniz--, Greece, 2012  
11th International Workshop on Dynamical Systems, Abstracts of 11th International Workshop on Dynamical Systems and Applications, Attendee, Ankara, Turkey, 2012  
CMMSE 2011, Attendee, Alacant, Spain, 2011

## **Citations**

Total Citations (WOS):106

h-index (WOS):4

## **Scholarships**

Yurt İçi Doktora Bursu, TUBITAK, 2010 - 2015

Yurt İçi Yüksek lisans Bursu, TUBITAK, 2008 - 2010