

## Asst. Prof. MEHMET ÜNLÜ

### Personal Information

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### International Researcher IDs

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### Education Information

Doctorate, University of Texas at Arlington, Fen Fakültesi, Matematik, United States Of America 2009 - 2014

Undergraduate, Van Yüzüncü Yıl University, Eğitim Fakültesi, Matematik Öğretmenliği, Turkey 2002 - 2007

### Academic Titles / Tasks

Assistant Professor, Recep Tayyip Erdogan University, Fen Edebiyat Fakültesi, Matematik Bölümü, 2015 - Continues

Research Assistant PhD, Recep Tayyip Erdogan University, Fen Edebiyat Fakültesi, Matematik Bölümü, 2014 - 2015

### Courses

Engineering Mathematics-I, Undergraduate, 2020 - 2021

Engineering Mathematics, Undergraduate, 2020 - 2021

Numerical Solutions of Differential Equations, Postgraduate, 2020 - 2021

Laplace Transformation and Applications-I, Postgraduate, 2020 - 2021

Integral Equations, Undergraduate, 2020 - 2021

Partial Differential Equations, Undergraduate, 2020 - 2021

### Advising Theses

Ünlü M., Exact Solution To The Focusing Nonlinear Schrödinger Equation, Postgraduate, S.Coruh(Student), Continues

Ünlü M., Soliton Solution of Korteweg De Vries Equation, Postgraduate, G.Gülşen(Student), Continues

Ünlü M., Kısmi türevli denklemlerin sonlu fark metodu ile nümerik çözümleri, Postgraduate, H.İBRAHİM(Student), 2020

Ünlü M., Darboux dönüşümleri için genel bir yaklaşım, Postgraduate, T.DİLİ(Student), 2017

Ünlü M., Çoklu solitonlar ve lineer olmayan kısmi diferensiyel denklemler, Postgraduate, E.ÖZDEMİR(Student), 2017

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

- I. **The Marchenko method to solve the general system of derivative nonlinear Schrödinger equations**  
Aktosun T., Ercan R., ÜNLÜ M.  
Journal of Mathematical Physics, vol.64, no.7, 2023 (SCI-Expanded)
- II. **The Generalized Marchenko Method in the Inverse Scattering Problem for a First-Order Linear**

### **System with Energy-Dependent Potentials**

Aktosun T., Ercan R., ÜNLÜ M.

Journal of Mathematical Physics, Analysis, Geometry, vol.19, no.1, pp.3-58, 2023 (SCI-Expanded)

### **III. A generalized method for the Darboux transformation**

Aktosun T., ÜNLÜ M.

JOURNAL OF MATHEMATICAL PHYSICS, vol.63, no.9, 2022 (SCI-Expanded)

### **IV. Inverse problems for selfadjoint Schrodinger operators on the half line with compactly supported potentials**

AKTOSUN T., Sacks P., Unlu M.

JOURNAL OF MATHEMATICAL PHYSICS, vol.56, no.2, 2015 (SCI-Expanded)

## **Books & Book Chapters**

### **I. Diferansiyel Denklemler Teorisi ve Çözümlü Örnekler**

AMİROV R., TOPSAKAL N., ÜNLÜ M.

Nobel, 2022

## **Refereed Congress / Symposium Publications in Proceedings**

### **I. THE GENERAL SYSTEM OF GERDJIKOV-IVANOV EQUATION**

Ünlü M., Ercan R.

IV International Conference on Mathematics and Its Applications in Science and Engineering (ICMASE 2023), Madrid, Spain, 12 - 14 July 2023, pp.34

### **II. The Marchenko Method to Solve a First-Order Linear System with Energy-Dependent Potentials**

Ünlü M., Ercan R.

7th International Conference on Mathematics: An Istanbul Meeting for World Mathematicians, İstanbul, Turkey, 11 - 13 July 2023, pp.110

### **III. THE SELFADJOINT SCHRÖDINGER OPERATOR ON THE HALF LINE WITH A REAL-VALUED COMPACTLY SUPPORTED POTENTIAL**

Ünlü M.

9th International IFS and Contemporary Mathematics and Engineering Conference, Mersin, Turkey, 8 - 11 July 2023, pp.122

### **IV. The Marchenko Method for the Derivative NLS Equation**

Ünlü M., Ercan R.

6th International HYBRID Conference on Mathematical Advances and Applications (ICOMAA 2023), İstanbul, Turkey, 10 - 13 May 2023, pp.129

### **V. THE GENERAL SYSTEM OF CHEN-LEE-LIU EQUATION**

ÜNLÜ M.

11th International Eurasian Conference on Mathematical Sciences and Applications (IECMSA-2022), İstanbul, Turkey, 29 August 2022

### **VI. Darboux Transformation for The Schrödinger Equation**

Ünlü M.

Celebration of Life – Acad. Prof. Constantin Corduneanu, Virtual Mini-Symposium, California, United States Of America, 26 July 2021, pp.3

### **VII. A generalized approach to Darboux transformations for differential equations**

ÜNLÜ M.

SACNAS National Conference, San Antonio, United States Of America, 3 - 06 November 2013, pp.314-315

### **VIII. Determination of a compactly supported potential for the half-line Schrödinger equation from the continuous part of the spectral function**

ÜNLÜ M.

Workshop on Inverse Problems, College Station, United States Of America, 01 November 2011, pp.4

## Metrics

Publication: 13

Citation (WoS): 10

Citation (Scopus): 14

H-Index (WoS): 1

H-Index (Scopus): 1

## Congress and Symposium Activities

1. Solitons in Two-Dimensional Water Waves and Applications to Tsunami, NSF/CBMS Regional Conference in the Mathematical Sciences, Attendee, Texas, United States Of America, 2013
3. SACNAS National Conference, Seattle, Attendee, Washington, United States Of America, 2012
2. Mathematical Methods of Computed Tomography, National Science Foundation, CBMS Conference, Arlington, Attendee, Texas, Turkey, 2012
4. Introductory Workshop: Free Boundary Problems, Theory and Applications, Mathematical Sciences Research Institute (MSRI), Berkeley, Attendee, California, United States Of America, 2011
5. Nonlinear Water Waves with Applications to Wave-Current Interactions and Tsunamis, NSF/CBMS Regional Conference in the Mathematical Sciences, Edinburg, Attendee, Texas, United States Of America, 2010

## Scholarships

Dissertation Fellowship, University, 2014 - 2014

Yurt Dışı Doktora Bursu, Ministry of Education, 2008 - 2014