

## Lect. PhD MELTEM ALTUNKAYNAK

### Personal Information

Web: <https://avesis.deu.edu.tr/meltem.topcuoglu>

### International Researcher IDs

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Publons / Web Of Science ResearcherID: AAR-7626-2020

ScopusID: 27367463500

Yoksis Researcher ID: 142420

### Education Information

Doctorate, Dokuz Eylul University, Fen Fakültesi, Matematik Bölümü, Turkey 2005 - 2010

Postgraduate, Dokuz Eylul University, Fen Fakültesi, Matematik Bölümü, Turkey 2003 - 2005

Undergraduate, Dokuz Eylul University, Fen Fakültesi, Matematik Bölümü, Turkey 1999 - 2003

### Foreign Languages

English, B2 Upper Intermediate

### Dissertations

Doctorate, Mathematical models and methods of wave theory, Dokuz Eylul University, Fen Bilimleri Enstitüsü, 2010

Postgraduate, Initial boundary value problem for the elasticity system in the spherical domain, Dokuz Eylul University, Fen Bilimleri Enstitüsü, 2005

### Research Areas

Differential Equations

### Academic Titles / Tasks

Lecturer, Dokuz Eylul University, Fen Fakültesi, Matematik Bölümü, 2011 - Continues

Research Assistant, Dokuz Eylul University, Fen Fakültesi, Matematik Bölümü, 2004 - 2011

### Courses

CALCULUS II, Undergraduate, 2023 - 2024, 2022 - 2023, 2020 - 2021, 2016 - 2017, 2014 - 2015, 2010 - 2011

Project, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2018 - 2019, 2015 - 2016, 2014 - 2015, 2012 - 2013

MATEMATİK I, Undergraduate, 2023 - 2024, 2021 - 2022, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2013 - 2014, 2012 - 2013

GRADUATION PROJECT, Undergraduate, 2023 - 2024  
CALCULUS I, Undergraduate, 2023 - 2024, 2022 - 2023, 2016 - 2017, 2011 - 2012  
Linear Algebra, Undergraduate, 2021 - 2022  
Partial Differential Equations, Undergraduate, 2021 - 2022, 2020 - 2021, 2014 - 2015, 2013 - 2014, 2011 - 2012  
MATEMATİKTE SEÇME KONULAR, Undergraduate, 2021 - 2022  
Applied Mathematics, Undergraduate, 2022 - 2023, 2015 - 2016, 2014 - 2015  
DIFFERENTIAL EQUATIONS, Undergraduate, 2021 - 2022  
MATEMATİK III, Undergraduate, 2020 - 2021, 2018 - 2019, 2015 - 2016, 2014 - 2015, 2013 - 2014, 2011 - 2012  
Matematik II, Undergraduate, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2013 - 2014, 2011 - 2012, 2010 - 2011  
Differential Equations II, Undergraduate, 2017 - 2018, 2016 - 2017  
CALCULUS III, Undergraduate, 2018 - 2019  
İLERİ ANALİZ I, Undergraduate, 2018 - 2019  
Diferensiyel Denklemler, Undergraduate, 2017 - 2018  
BÖLÜM İÇİ SEÇMELİ PROJE, Undergraduate, 2017 - 2018, 2016 - 2017  
Differential Equations I, Undergraduate, 2017 - 2018, 2016 - 2017  
Applied Mathematics, Postgraduate, 2014 - 2015  
Lineer Cebir, Undergraduate, 2012 - 2013  
Engineering Mathematics, Undergraduate, 2011 - 2012

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

- I. **Solving elastodynamic problems of 2D quasicrystals in inhomogeneous media**  
ALTUNKAYNAK M.  
Applications of Mathematics, vol.69, no.3, pp.289-309, 2024 (SCI-Expanded)
- II. **Initial value problem for elastic system in transversely isotropic inhomogeneous media**  
Altunkaynak M.  
TURKISH JOURNAL OF MATHEMATICS, vol.46, pp.2714-2727, 2022 (SCI-Expanded)
- III. **An analytical method for solving elastic system in inhomogeneous orthotropic media**  
Altunkaynak M.  
MATHEMATICAL METHODS IN THE APPLIED SCIENCES, vol.42, no.7, pp.2324-2333, 2019 (SCI-Expanded)
- IV. **Symbolic computation of the time-dependent electric and magnetic fields in bi-anisotropic media with polynomial inputs**  
Yakhno V., ALTUNKAYNAK M.  
INTERNATIONAL JOURNAL OF NUMERICAL MODELLING-ELECTRONIC NETWORKS DEVICES AND FIELDS, vol.31, no.5, 2018 (SCI-Expanded)
- V. **Coefficient identification for cubically anisotropic elastic media**  
ALTUNKAYNAK M., Sacks P., Yakhno V. G.  
INVERSE PROBLEMS IN SCIENCE AND ENGINEERING, vol.24, no.4, pp.567-582, 2016 (SCI-Expanded)
- VI. **A polynomial approach to determine the time-dependent electric and magnetic fields in anisotropic materials by symbolic computations**  
Yakhno V., ALTUNKAYNAK M.  
COMPEL-THE INTERNATIONAL JOURNAL FOR COMPUTATION AND MATHEMATICS IN ELECTRICAL AND ELECTRONIC ENGINEERING, vol.35, no.3, pp.1179-1202, 2016 (SCI-Expanded)
- VII. **A new method for computing a solution of the Cauchy problem with polynomial data for the system of crystal optics**  
Yakhno V., Altunkaynak M.  
INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS, vol.87, no.7, pp.1469-1484, 2010 (SCI-Expanded)

## Articles Published in Other Journals

### I. Polynomial Solutions of Electric Field Equations in Anisotropic Media

ALTUNKAYNAK M.

Manas Journal of Engineering, 2024 (Peer-Reviewed Journal)

## Tasks In Event Organizations

Altunkaynak M., 8th International Workshop On Differential Equations And Applications, Scientific Congress, Turkey, Haziran 2017

Altunkaynak M., III.Kadın Matematikçiler Derneği Çalıştayı, İzmir, Scientific Congress, Turkey, Mayıs 2016

## Metrics

Publication: 13

Citation (WoS): 13

Citation (Scopus): 13

H-Index (WoS): 3

H-Index (Scopus): 2

## Congress and Symposium Activities

BURSA 2ND INTERNATIONAL CONFERENCE ON MATHEMATICS AND ENGINEERING, Attendee, Bursa, Turkey, 2024  
Second Bilateral Workshop On Science Between Dokuzeyslul University And Azerbaijan National Academy Of Science, Audience, İzmir, Turkey, 2022

First Bilateral Workshop On Science Between Dokuzeyslul University And Azerbaijan National Academy Of Science, Audience, İzmir, Turkey, 2021

International Congress On Fundamental And Applied Sciences, Attendee, Antalya, Turkey, 2021

8th International Workshop On Differential Equations And Applications, Working Group, Aydın, Turkey, 2017

14th International Conference On Difference Equations And Applications, Audience, İstanbul, Turkey, 2008

4. Sayısal Analiz ve Uygulamaları Konferansı, Attendee, Plovdiv, Bulgaria, 2008