

## Prof. Dr. VİLDAN GÜLKAÇ

### Kişisel Bilgiler

E-posta: vgulkac@kocaeli.edu.tr

Web: <https://avesis.kocaeli.edu.tr/vgulkac>

### Eğitim Bilgileri

Doktora, İnönü Üniversitesi, Fen Bilimleri Enstitüsü, Matematik, Türkiye 1989 - 1994

Yüksek Lisans, İnönü Üniversitesi, Fen Bilimleri Enstitüsü, Matematik, Türkiye 1986 - 1989

Lisans, İnönü Üniversitesi, Fen-Edebiyat Fakültesi, Matematik, Türkiye 1982 - 1986

### Yabancı Diller

İngilizce, B2 Orta Üstü

### Yaptığı Tezler

Doktora, Konvektif sınır koşullu erime (Fusion) problemlerinin ters(Boadways) dönüşümlerle sayısal çözümü, Kocaeli Üniversitesi, Fen-Edebiyat Fakültesi, Matematik Bölümü, 1994

### Araştırma Alanları

Diferansiyel denklemler, Fark Denklemleri ve Fonksiyonel Denklemler, İntegral Dönüşümler, İşlemsel Hesaplama, Kısmi diferansiyel eşitlikler

### Akademik Unvanlar / Görevler

Prof. Dr., Kocaeli Üniversitesi, Fen Edebiyat Fakültesi, Matematik, 2018 - Devam Ediyor

Doç. Dr., Kocaeli Üniversitesi, Fen Edebiyat Fakültesi, Matematik, 2012 - 2018

Yrd. Doç. Dr., Kocaeli Üniversitesi, Fen Edebiyat Fakültesi, Matematik, 1995 - 2012

Yrd. Doç. Dr., İnönü Üniversitesi, Fen-Edebiyat Fakültesi, Matematik Bölümü, 1995 - 1995

Araştırma Görevlisi, İnönü Üniversitesi, Fen-Edebiyat Fakültesi, Matematik Bölümü, 1987 - 1995

### Yönetilen Tezler

Gülkaç V., Kesirli türev içeren difüzyon denkleminin Laplace dönüşümü metodu ile kaynak fonksiyonunun bulunması, Yüksek Lisans, S.DEDEOĞLU(Öğrenci), 2019

Gülkaç V., Doğrusal olmayan dalga denklemlerinin chebyshev polinomu ile nümerik çözümü, Yüksek Lisans, Ö.YANAZ(Öğrenci), 2002

## SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

- I. **The New Approximate Analytic Solution for Oxygen Diffusion Problem with Time-Fractional Derivative**  
GÜLKAÇ V.  
MATHEMATICAL PROBLEMS IN ENGINEERING, 2016 (SCI-Expanded)
- II. **A Method of Finding Source Function for Inverse Diffusion Problem with Time-Fractional Derivative**  
GÜLKAÇ V.  
ADVANCES IN MATHEMATICAL PHYSICS, 2016 (SCI-Expanded)
- III. **Numerical Solutions of Two-Dimensional Burgers' Equations**  
GÜLKAÇ V.  
International Journal of Scientific and Engineering Research, cilt.6, sa.4, ss.215-218, 2015 (SCI-Expanded)
- IV. **The homotopy perturbation method for the Black-Scholes equation**  
Gulkac V.  
JOURNAL OF STATISTICAL COMPUTATION AND SIMULATION, cilt.80, sa.12, ss.1349-1354, 2010 (SCI-Expanded)
- V. **Comparative study between two numerical methods for oxygen diffusion problem**  
Gulkac V.  
COMMUNICATIONS IN NUMERICAL METHODS IN ENGINEERING, cilt.25, sa.8, ss.855-863, 2009 (SCI-Expanded)
- VI. **On the finite differences schemes for the numerical solution of two-dimensional moving boundary problem**  
Gulkac V.  
APPLIED MATHEMATICS AND COMPUTATION, cilt.168, sa.1, ss.549-556, 2005 (SCI-Expanded)
- VII. **On a LOD method for solution of two dimensional fusion problem with convective boundary conditions**  
Gulkac V., Ozis T.  
INTERNATIONAL COMMUNICATIONS IN HEAT AND MASS TRANSFER, cilt.31, sa.4, ss.597-606, 2004 (SCI-Expanded)
- VIII. **Numerical solution of two-dimensional Schrodinger equation by Boadway's transformation**  
Gulkac V.  
INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS, cilt.80, sa.12, ss.1543-1548, 2003 (SCI-Expanded)
- IX. **Application of variable interchange method for solution of two-dimensional fusion problem with convective boundary conditions**  
Ozis T., Gulkac V.  
NUMERICAL HEAT TRANSFER PART A-APPLICATIONS, cilt.44, sa.1, ss.85-95, 2003 (SCI-Expanded)

## Diğer Dergilerde Yayınlanan Makaleler

- I. **ANALYSIS OF TWO DIMENSIONAL PARABOLIC EQUATION WITH PERIODIC BOUNDARY CONDITIONS**  
GÜLKAÇ V., BAĞLAN İ.  
COMMUNICATIONS FACULTY OF SCIENCES UNIVERSITY OF ANKARA-SERIES A1 MATHEMATICS AND STATISTICS, cilt.67, ss.328-334, 2018 (Hakemli Dergi)
- II. **Application of Variable Interchange Method for Solution of Two-Dimensional Burgers'xx Equations**  
GÜLKAÇ V.  
New Trends in Mathematical Science, cilt.1, sa.5, ss.158-163, 2017 (Hakemli Dergi)
- III. **A Linearized Iterative Method for Solving Two-Dimensional Non-Linear Burgers' Equations**  
GÜLKAÇ V.  
Asian Journal of Mathematics and Computer Research, cilt.19, sa.1, ss.1-8, 2017 (Hakemli Dergi)
- IV. **Numerical Approach for the Two-Dimensional Heat Equation Problemwith Convective Boundary Conditions**  
GÜLKAÇ V.

Sakarya University Journal of Science (SAUJS), cilt.21, sa.1, ss.343-349, 2017 (Hakemli Dergi)

**V. An Extrapolation Method for Oxygen Diffusion Problem**

GÜLKAÇ V.

International Journal of Scientific and Engineering Research, cilt.6, sa.4, ss.222-226, 2015 (Hakemli Dergi)

**VI. An Implicit Finite-Difference Method for Solving the Heat Transfer Equation**

GÜLKAÇ V.

International Journal of Scientific and Innovative Mathematical Research, cilt.3, sa.2, ss.39-44, 2015 (Hakemli Dergi)

**VII. Comparative Study Analytic and Numerical Methods for Solving Non Linear Black Scholes Equation with European Call Option**

GÜLKAÇ V.

International Journal of Scientific and Innovative Mathematical Research, cilt.3, sa.2, ss.66-78, 2015 (Hakemli Dergi)

**VIII. A numerical solution of the two-dimensional fusion problem with convective boundary conditions**

GÜLKAÇ V.

International Journal of Computational Methods in Engineering Science and Mechanics, cilt.11, sa.1, ss.20-26, 2010 (Scopus)

**IX. Numerical Solution of One-Dimensional Stefan-Like Problems Using ThreeTime-Level Method**

GÜLKAÇ V.

Ozean Journal of Applied Sciences, cilt.2, sa.1, ss.19-24, 2009 (Hakemli Dergi)

**X. A Numerical Application of the Semi-Implicit Pseudo-Spectral Method for the Korteweg-de Vries Equation**

GÜLKAÇ V., ÖZİŞ T.

Ozean Journal of Applied Sciences, cilt.2, sa.1, ss.25-31, 2009 (Hakemli Dergi)

**XI. Treatment of Two-Dimensional Moving Boundary Problem by Boadway's Transformation**

GÜLKAÇ V., ÖZİŞ T.

Bulletin Calcutta Math. Soc., cilt.88, ss.253-260, 1996 (Hakemli Dergi)

## **Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar**

**I. Analytic Method of Finding Source Function for Diffusion Problem With Time-Fractional Derivative**

DEDEOĞLU S., GÜLKAÇ V.

ICAAMM 2017, İstanbul, Türkiye, 3 - 07 Temmuz 2017

**II. Explicit Finite Difference Method For Solution of Heat Diffusion Wave Equation with Mix Fractional Derivatives**

GÜLKAÇ V.

5th International Eurasian Conference on Mathematical Sciences and Applications, Belgrade, Sırbistan Ve Karadağ, 16 - 19 Ağustos 2016

**III. Numerical Approach for The Two Dimensional Fusion Problem with Convective Boundary Conditions**

GÜLKAÇ V.

International Conference on Mathematics and Mathematics Education, Elazığ, Türkiye, 12 - 14 Mayıs 2016

**IV. KdV Denklemi için Chebyshev Seri Çözümü**

GÜLKAÇ V., YANAZ ÇINAR Ö.

XIV. Ulusal Matematik Sempozyumu, Eskişehir, Türkiye, 19 - 21 Eylül 2001, ss.100

## **Metrikler**

Yayın: 24

Atf (WoS): 52

Atıf (Scopus): 65

H-İndeks (WoS): 5

H-İndeks (Scopus): 5

## **Akademi Dışı Deneyim**

Debrecen Üniversitesi