

## Assoc. Prof. ÖMER ÜNSAL

### Personal Information

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### Education Information

Doctorate, Eskisehir Osmangazi University, Fen Bilimleri Enstitüsü, Matematik-Bilgisayar Bilimleri (Dr), Turkey 2012 - 2016

Postgraduate, Eskisehir Osmangazi University, Fen Bilimleri Enstitüsü, Matematik-Bilgisayar Bilimleri (Yl) (Tezli), Turkey 2010 - 2012

Undergraduate, Anadolu University, Faculty Of Economics, Department Of Economics, Turkey 2008 - 2012

Undergraduate, Eskisehir Osmangazi University, Fen-Edebiyat Fakültesi, Matematik Bölümü, Turkey 2006 - 2010

### Dissertations

Doctorate, Lineer olmayan denklemlerin integrallenebilirliği, Eskisehir Osmangazi University, Fen Bilimleri Enstitüsü, Matematik-Bilgisayar Bilimleri (Dr), 2016

Postgraduate, Diskrit oluşum denklemlerinin integrallenebilirliği, Eskisehir Osmangazi University, Fen Bilimleri Enstitüsü, Matematik-Bilgisayar Bilimleri (Yl) (Tezli), 2012

### Research Areas

Natural Sciences

### Academic Titles / Tasks

Associate Professor, Eskisehir Osmangazi University, Fen Fakültesi, Matematik-Bilgisayar Bölümü, 2021 - Continues

Assistant Professor, Eskisehir Osmangazi University, Fen Fakültesi, Matematik-Bilgisayar Bölümü, 2016 - 2021

Research Assistant, Eskisehir Osmangazi University, Fen Fakültesi, Matematik-Bilgisayar Bölümü, 2010 - 2016

### Courses

Oyun Teori, Undergraduate, 2017 - 2018

Diferensiyel Denklemler II, Undergraduate, 2017 - 2018

Diferensiyel Denklemler, Undergraduate, 2017 - 2018, 2016 - 2017

Biyomatematik, Undergraduate, 2017 - 2018

Fark Denklemleri I, Undergraduate, 2017 - 2018

Kısmi Türevli Diferensiyel Denklemlerin Sayısal Uygulamaları II, Undergraduate, 2017 - 2018, 2016 - 2017

Volterra-Fredholm İntegral Denklemleri, Postgraduate, 2017 - 2018

Kompleks Analiz, Undergraduate, 2017 - 2018

İntegrallenebilirlik Teorisi, Doctorate, 2017 - 2018

Diferensiyel Denklemlerin Kompleksiton Çözümleri, Doctorate, 2017 - 2018  
Matematik II, Undergraduate, 2017 - 2018  
Diferensiyel Denklemler I, Undergraduate, 2017 - 2018  
Genelleştirilmiş Bilineer Türevler Teorisi, Postgraduate, 2017 - 2018  
Matematik, Undergraduate, 2017 - 2018  
Matematiksel Fizik, Undergraduate, 2017 - 2018  
Genel Matematik II, Undergraduate, 2017 - 2018, 2016 - 2017  
Analiz II, Undergraduate, 2016 - 2017

## Advising Theses

ÜNSAL Ö., Lineer Olmayan Oluşum Denklemlerinin Dalga Çözümleri ve Analizleri, Postgraduate, S.KARA(Student), 2020  
ÜNSAL Ö., Lineer olmayan kısmi diferensiyel denklemlerin kompleksiton çözümleri, Postgraduate, Z.SAKARTEPE(Student), 2020

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

- I. **An useful procedure for finding exact solutions to new form of (2+1)-dimensional B-type Kadomtsev-Petviashvili (BKP) equation**  
ÜNSAL Ö., Sakartepe Z.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.135, no.8, 2020 (SCI-Expanded)
- II. **Complexiton solutions for (3+1) dimensional KdV-type equation**  
ÜNSAL Ö.  
COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.75, no.7, pp.2466-2472, 2018 (SCI-Expanded)
- III. **Multiple-Wave Solutions to Generalized Bilinear Equations in Terms of Hyperbolic and Trigonometric Solutions**  
ÜNSAL Ö., Ma W., Zhang Y.  
INTERNATIONAL JOURNAL OF NONLINEAR SCIENCES AND NUMERICAL SIMULATION, vol.18, no.5, pp.395-401, 2017 (SCI-Expanded)
- IV. **Conservation laws and double reduction of (2+1) dimensional Calogero-Bogoyavlenskii-Schiff equation**  
SAN S., Akbulut A., ÜNSAL Ö., TAŞCAN F.  
MATHEMATICAL METHODS IN THE APPLIED SCIENCES, vol.40, no.5, pp.1703-1710, 2017 (SCI-Expanded)
- V. **Complexiton solutions for two nonlinear partial differential equations via modification of simplified Hirota method**  
ÜNSAL Ö., Bekir A., TAŞCAN F., ÖZER M. N.  
WAVES IN RANDOM AND COMPLEX MEDIA, vol.27, no.1, pp.117-128, 2017 (SCI-Expanded)
- VI. **A novel kind of AKNS integrable couplings and their Hamiltonian structures**  
Zhang Y., Ma W., ÜNSAL Ö.  
TURKISH JOURNAL OF MATHEMATICS, vol.41, no.6, pp.1467-1476, 2017 (SCI-Expanded)
- VII. **Analytical approach for space-time fractional Klein-Gordon equation**  
ÜNSAL Ö., GÜNER Ö., Bekir A.  
OPTİK, vol.135, pp.337-345, 2017 (SCI-Expanded)
- VIII. **Exact solutions of nonlinear Schrodinger equation by using symbolic computation**  
Kaplan M., ÜNSAL Ö., Bekir A.  
MATHEMATICAL METHODS IN THE APPLIED SCIENCES, vol.39, no.8, pp.2093-2099, 2016 (SCI-Expanded)
- IX. **Linear superposition principle of hyperbolic and trigonometric function solutions to generalized bilinear equations**  
ÜNSAL Ö., Ma W.

COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.71, no.6, pp.1242-1247, 2016 (SCI-Expanded)

- X. **APPLICATIONS OF FRACTIONAL COMPLEX TRANSFORM AND  $(G'/G)$ -EXPANSION METHOD FOR TIME-FRACTIONAL DIFFERENTIAL EQUATIONS**  
Bekir A., GÜNER Ö., ÜNSAL Ö., Mirzazadeh M.  
JOURNAL OF APPLIED ANALYSIS AND COMPUTATION, vol.6, no.1, pp.131-144, 2016 (SCI-Expanded)
- XI. **Two reliable methods for solving the time fractional Clannish Random Walker's Parabolic equation**  
GÜNER Ö., Bekir A., ÜNSAL Ö.  
OPTIK, vol.127, no.20, pp.9571-9577, 2016 (SCI-Expanded)
- XII. **Soliton Solutions, Backlund Transformation and Lax Pair for Coupled Burgers System via Bell Polynomials**  
ÜNSAL Ö., TAŞCAN F.  
ZEITSCHRIFT FÜR NATURFORSCHUNG SECTION A-A JOURNAL OF PHYSICAL SCIENCES, vol.70, no.5, pp.359-363, 2015 (SCI-Expanded)
- XIII. **The First Integral Method for Exact Solutions of Nonlinear Fractional Differential Equations**  
Bekir A., Guner O., ÜNSAL Ö.  
JOURNAL OF COMPUTATIONAL AND NONLINEAR DYNAMICS, vol.10, no.2, 2015 (SCI-Expanded)
- XIV. **Multiscale expansions in discrete world**  
ÜNSAL Ö., TAŞCAN F., ÖZER M. N.  
PRAMANA-JOURNAL OF PHYSICS, vol.83, no.1, pp.21-28, 2014 (SCI-Expanded)
- XV. **New exact solutions for boussinesq type equations by using  $(G_0=G; 1=G)$  and  $(1=G_0)$ -expansion methods**  
Demiray S., Unsal Ö., Bekir A.  
Acta Physica Polonica A, vol.125, no.5, pp.1093-1098, 2014 (SCI-Expanded)
- XVI. **Analytic treatment of nonlinear evolution equations using first integral method**  
Bekir A., ÜNSAL Ö.  
PRAMANA-JOURNAL OF PHYSICS, vol.79, no.1, pp.3-17, 2012 (SCI-Expanded)
- XVII. **Periodic and solitary wave solutions of coupled nonlinear wave equations using the first integral method**  
Bekir A., ÜNSAL Ö.  
PHYSICA SCRIPTA, vol.85, no.6, 2012 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Analytical solutions to new forms of two nonlinear partial differential equations via two variable expansion method**  
Kara S., ÜNSAL Ö.  
Partial Differential Equations in Applied Mathematics, vol.5, 2022 (Scopus)
- II. **Complexiton solutions for new form of  $(3+1)$ -dimensional BKP-Boussinesq equation**  
ÜNSAL Ö.  
Journal of Ocean Engineering and Science, 2022 (Scopus)
- III. **Implementation of two variable expansion method for extended Jimbo–Miwa equations**  
Kara S., ÜNSAL Ö.  
Journal of Ocean Engineering and Science, 2022 (Scopus)
- IV. **Application of Extended Transformed Rational Function Method to Some  $(3+1)$  Dimensional Nonlinear Evolution Equations**  
ÜNSAL Ö.  
Karaelmas Science and Engineering Journal, vol.8, no.2, pp.433-437, 2018 (Peer-Reviewed Journal)
- V. **NONLINEAR SELF ADJOINTNESS AND EXACT SOLUTION OF FOKAS-OLVER-ROSENAU-QIAO (FORQ) EQUATION**  
TAŞCAN F., ÜNSAL Ö., Akbulut A., SAN S.

COMMUNICATIONS FACULTY OF SCIENCES UNIVERSITY OF ANKARA-SERIES A1 MATHEMATICS AND STATISTICS, vol.67, no.2, pp.317-326, 2018 (ESCI)

- VI. **Exact solutions of nonlinear wave equations using  $(G'/G, 1/G)$ -expansion method**  
DEMİRAY S., ÜNSAL Ö., BEKİR A.  
Journal of the Egyptian Mathematical Society, vol.23, no.1, pp.78-84, 2015 (Peer-Reviewed Journal)
- VII. **Exact solutions of the Zoomeron and Klein Gordon Zakharov equations**  
BEKİR A., TAŞCAN GÜNEY F., ÜNSAL Ö.  
Journal of the Association of Arab Universities for Basic and Applied Sciences, vol.17, no.1, pp.1-5, 2015 (Peer-Reviewed Journal)
- VIII. **Exact Solutions for a Class of Nonlinear Wave Equations By Using First Integral Method**  
BEKİR A., ÜNSAL Ö.  
International Journal of Nonlinear Science, vol.15, no.2, pp.99-110, 2013 (Peer-Reviewed Journal)

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

- I. **An Efficient Method for Finding Trigonometric, Hyperbolic and Mixed Type Exact Solutions to New Form of (21)-Dimensional BKP Equation**  
ÜNSAL Ö.  
International Symposium on Academic Studies in Science, Engineering and Architecture Sciences, Ankara, Turkey, 15 - 17 November 2019, pp.133
- II. **Complexiton and Interaction solutions for (21)-Dimensional Sawada-Kotera equation**  
ÜNSAL Ö.  
Recent Advances in Mathematical and Engineering Sciences: International Mathematics and Engineering Conference, 24-26 July 2019 Lviv, Ukraine, Lviv, Ukraine, 24 - 26 July 2019, pp.21
- III. **New Exact Solutions for New Form of (31)-Dimensional BKP-Boussinesq Equation**  
ÜNSAL Ö.  
Recent Advances in Mathematical and Engineering Sciences: International Mathematics and Engineering Conference, 24-26 July 2019 Lviv, Ukraine, Lviv, Ukraine, 24 - 26 July 2019, pp.19
- IV. **On the Complexiton Solutions of Generalized Bilinear Equations via Extended Transformed Rational Function Method**  
ÜNSAL Ö., TAŞCAN GÜNEY F.  
INTERNATIONAL CONFERENCE ON MATHEMATICS "An Istanbul Meeting for World Mathematicians" Minisymposium on Approximation Theory Minisymposium on Math Education, İstanbul, Turkey, 3 - 06 July 2018, pp.279
- V. **Modified Double Sub-Equation Method for Solving Nonlinear Evolution Equations**  
ÜNSAL Ö., KOPARAN M.  
7th International Conference on Applied Analysis and Mathematical Modeling, İstanbul, Turkey, 20 - 24 June 2018, pp.219
- VI. **Multiple Scales Method for Higher Order KdV Equation**  
Çakır F., KOPARAN M., ÜNSAL Ö.  
International Conference on Mathematical Advances and Application, İstanbul, Turkey, 11 - 13 May 2018, pp.56
- VII. **Construction of Exact Solutions to Partial Differential Equations with Trial Method**  
TAŞCAN GÜNEY F., Pir L. B., ÜNSAL Ö.  
3rd International Conference on Computational Mathematics and Engineering Sciences, Girne, Cyprus (Kktc), 4 - 06 May 2018
- VIII. **Extended Transformed Rational Function Method for Some (31)Dimensional Nonlinear Partial Differential Equations**  
ÜNSAL Ö., BEKİR A., KOPARAN M.  
6th International Eurasian Conference on Mathematical Sciences and Applications, Budapest, Hungary, 15 - 18 August 2017, pp.160-161

- IX. Simplified Hirota Method for a Nonlinear Partial Differential Equation**  
 ÜNSAL Ö., BEKİR A., KOPARAN M.  
 6th International Eurasian Conference on Mathematical Sciences and Applications, Budapest, Hungary, 15 - 18 August 2017, pp.158-159
- X. Soliton solution and other solutions to a nonlinear fractional differential equation**  
 GÜNER Ö., ÜNSAL Ö., Bekir A., Kadem A.  
 11th International Conference on Mathematical Problems in Engineering, Aerospace and Sciences (ICNPAA), La Rochelle, France, 4 - 08 July 2016, vol.1798
- XI. The  $(G'/G)$ -expansion method for the nonlinear time fractional differential equations**  
 ÜNSAL Ö., GÜNER Ö., Bekir A., ÇEVİKEL A. C.  
 11th International Conference on Mathematical Problems in Engineering, Aerospace and Sciences (ICNPAA), La Rochelle, France, 4 - 08 July 2016, vol.1798
- XII. Singular 1-soliton solution of the nonlinear variable-coefficient diffusion reaction and mKdV equations**  
 GÜNER Ö., Bekir A., ÜNSAL Ö., ÇEVİKEL A. C.  
 11th International Conference on Mathematical Problems in Engineering, Aerospace and Sciences (ICNPAA), La Rochelle, France, 4 - 08 July 2016, vol.1798
- XIII. Analytical approach for space time fractional Klein Gordon equation**  
 ÜNSAL Ö., GÜNER Ö., BEKİR A.  
 International Conference on Quantum Science and Applications, Eskişehir, Turkey, 25 - 27 May 2016, pp.161
- XIV. Complexiton solutions for some nonlinear partial differential equations**  
 ÜNSAL Ö., BEKİR A., TAŞCAN GÜNEY F., ÖZER M. N.  
 ICQSA-2016, 25 - 27 May 2016
- XV. Exact solutions of some fractional differential equations by various expansion methods**  
 Topsakal M., GÜNER Ö., Bekir A., ÜNSAL Ö.  
 International Conference on Quantum Science and Applications (ICQSA), Eskişehir, Turkey, 25 - 27 May 2016, vol.766
- XVI. Application of Binary Bell Polynomial Approach to a 2 1 Dimensional Nonlinear Evolution Equation**  
 ÜNSAL Ö., TAŞCAN GÜNEY F., ÖZER M. N.  
 IECMSA-2014, 3rd International Eurasian Conference on Mathematical Sciences and Applications, Viyana, Austria, 25 - 28 August 2014, pp.247-248
- XVII. An efficient method for solving the nonlinear fractional Klein Gordon type equations**  
 ÜNSAL Ö., BEKİR A., GÜNER Ö.  
 Karatekin Mathematics Days-International Symposium on Mathematics, Çankırı, Turkey, 11 - 13 June 2014, pp.130
- XVIII. Çok Ölçekli Açılım Metodunun Diferensiyel Fark Denklemlerine Uygulamaları**  
 ÜNSAL Ö., TAŞCAN GÜNEY F., ÖZER M. N.  
 13. Matematik Sempozyumu, Turkey, 15 - 17 May 2014
- XIX. Lineer Olmayan Schrödinger Denkleminin Hareketli Dalga Çözümleri**  
 KAPLAN M., ÜNSAL Ö., BEKİR A.  
 8. Ankara Matematik Günleri, Ankara, Turkey, 13 - 14 June 2013, pp.50
- XX. Travelling Wave Solutions of Nonlinear Equations Using the  $(G'/G, 1/G)$  Expansion Method**  
 DEMİRAY S., ÜNSAL Ö., BEKİR A.  
 International Conference on Applied Analysis and Mathematical Modeling (ICAAMM2013), İstanbul, Turkey, 2 - 05 June 2013, pp.428-429
- XXI. Lineer Olmayan Oluşum Denklemlerinin  $(G'/G, 1/G)$  Metodu ile Hareketli Dalga Çözümleri**  
 ÜNSAL Ö., DEMİRAY S., BEKİR A.  
 12. Matematik Sempozyumu, Ankara, Turkey, 23 - 25 May 2013, pp.311-313

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H-Index (Scopus): 10