

Prof. GÜLNİHAL MERAL

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: GQH-8253-2022

ScopusID: 35771361400

Yoksis Researcher ID: 29522

Education Information

Doctorate, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Mathematics, Turkey 2005 - 2009

Postgraduate, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Mathematics, Turkey 2002 - 2005

Undergraduate, Ankara University, Fen Fakültesi, Matematik Bölümü, Turkey 1998 - 2002

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Numerical solution of nonlinear reaction-diffusion and wave equations, Middle East Technical University, Graduate School Of Natural And Applied Sciences, 2009

Postgraduate, Solution of Nonlinear Diffusion Equation Using Dual Reciprocity Boundary Element Method And A Relaxation Type Time Integration Scheme', Middle East Technical University, Graduate School Of Natural And Applied Sciences, 2005

Research Areas

Mathematics, Differential Equations, Numerical Analysis

Academic Titles / Tasks

Professor, Ankara Yıldırım Beyazıt University, Mühendislik ve Doğa Bilimleri Fakültesi, Matematik, 2018 - Continues

Associate Professor, Ankara Yıldırım Beyazıt University, Mühendislik ve Doğa Bilimleri Fakültesi, Matematik, 2016 - 2018

Associate Professor, Zonguldak Bülent Ecevit University, Faculty Of Arts And Sciences, 2013 - 2016

Assistant Professor, Bülent Ecevit Üniversitesi, Fen-Edebiyat Fakültesi, Matematik Bölümü, 2009 - 2013
Research Assistant, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Mathematics, 2002 - 2009

Academic and Administrative Experience

Fakülte Yönetim Kurulu Üyesi, Ankara Yıldırım Beyazıt University, Mühendislik ve Doğa Bilimleri Fakültesi, 2022 - Continues
Birim Kalite Komisyonu Başkanı, Ankara Yıldırım Beyazıt University, Mühendislik ve Doğa Bilimleri Fakültesi, Matematik, 2021 - Continues
Vice Dean, Ankara Yıldırım Beyazıt University, Mühendislik ve Doğa Bilimleri Fakültesi, 2021 - Continues
Deputy Head of Department, Ankara Yıldırım Beyazıt University, Mühendislik ve Doğa Bilimleri Fakültesi, Matematik Bölümü, 2018 - 2024
Rektörlük Akademik Teşvik Değerlendirme Komisyonu Üyesi, Ankara Yıldırım Beyazıt University, Mühendislik ve Doğa Bilimleri Fakültesi, Matematik, 2016 - 2020
Fakülte Kurulu Üyesi, Ankara Yıldırım Beyazıt University, Mühendislik ve Doğa Bilimleri Fakültesi, Matematik, 2018 - 2018
Bölüm Akademik Teşvik Değerlendirme Komisyonu Üyesi, Ankara Yıldırım Beyazıt University, Mühendislik ve Doğa Bilimleri Fakültesi, Matematik, 2016 - 2017
Bülent Ecevit Üniversitesi, Fen-Edebiyat Fakültesi, Matematik Bölümü, 2014 - 2016
Erasmus Coordinator, Zonguldak Bülent Ecevit University, Faculty Of Arts And Sciences, 2011 - 2016
Bülent Ecevit Üniversitesi, Fen-Edebiyat Fakültesi, Matematik Bölümü, 2009 - 2014

Jury Memberships

Doctorate, Doctorate, Karadeniz Teknik Üniversitesi, July, 2024
Post Graduate, Post Graduate, Ankara Üniversitesi, January, 2024
Associate Professor Exam, Associate Professor Exam, Ankara Yıldırım Beyazıt Üniversitesi, March, 2023
Post Graduate, Post Graduate, Ankara Üniversitesi, January, 2023
Associate Professor Exam, Associate Professor Exam, Üniversitelerarası Kurul Başkanlığı, October, 2022
Associate Professor Exam, Associate Professor Exam, Üniversitelerarası Kurul Başkanlığı, March, 2022
Post Graduate, Post Graduate, Ankara Üniversitesi, March, 2022
Associate Professor Exam, Associate Professor Exam, Üniversitelerarası Kurul Başkanlığı, December, 2021
Doctorate, Doctorate, Orta Doğu Teknik Üniversitesi, September, 2021
Post Graduate, Post Graduate, Selçuk Üniversitesi, July, 2021
Associate Professor Exam, Associate Professor Exam, Üniversitelerarası Kurul Başkanlığı, May, 2021
Associate Professor Exam, Associate Professor Exam, Üniversitelerarası Kurul Başkanlığı, January, 2021
Post Graduate, Post Graduate, Ankara Üniversitesi, January, 2021
Associate Professor Exam, Associate Professor Exam, Üniversitelerarası Kurum Başkanlığı, July, 2020
Associate Professor Exam, Associate Professor Exam, Üniversitelerarası Kurul Başkanlığı, March, 2019
Doctoral Examination, Doctoral Examination, Orta Doğu Teknik Üniversitesi, June, 2018
Doctorate, Doctorate, Muğla Sıtkı Koçman Üniversitesi, May, 2018
Doctoral Examination, Doctoral Examination, Orta Doğu Teknik Üniversitesi, November, 2017
Doctorate, Doctorate, Orta Doğu Teknik Üniversitesi, October, 2017
Post Graduate, Post Graduate, Zonguldak Bülent Ecevit Üniversitesi, August, 2017
Post Graduate, Post Graduate, Ankara Yıldırım Beyazıt Üniversitesi, July, 2017

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **DRBEM-FDM solution of a chemotaxis–haptotaxis model for cancer invasion**
Meral G.
Journal of Computational and Applied Mathematics, vol.354, pp.299-309, 2019 (SCI-Expanded)
- II. **Mathematical analysis and numerical simulations for the HSP70 synthesis model**
Meral G., PELEN N. N.
Journal of Mathematical Chemistry, vol.56, no.10, pp.3089-3114, 2018 (SCI-Expanded)
- III. **On a multiscale model involving cell contractivity and its effects on tumor invasion**
Meral G., Stinner C., Surulescu C.
Discrete and Continuous Dynamical Systems - Series B, vol.20, no.1, pp.189-213, 2015 (SCI-Expanded)
- IV. **A multiscale model for pH-tactic invasion with time-varying carrying capacities**
Stinner C., Surulescu C., Meral G.
IMA Journal of Applied Mathematics (Institute of Mathematics and Its Applications), vol.80, no.5, pp.1300-1321, 2014 (SCI-Expanded)
- V. **Mathematical modelling, analysis and numerical simulations for the influence of heat shock proteins on tumour invasion**
Meral G., Surulescu C.
Journal of Mathematical Analysis and Applications, vol.408, no.2, pp.597-614, 2013 (SCI-Expanded)
- VI. **Differential quadrature solution of heat- and mass-transfer equations**
Meral G.
Applied Mathematical Modelling, vol.37, no.6, pp.4350-4359, 2013 (SCI-Expanded)
- VII. **The comparison between the DRBEM and DQM solution of nonlinear reaction-diffusion equation**
Meral G., Tezer-Sezgin M.
Communications in Nonlinear Science and Numerical Simulation, vol.16, no.10, pp.3990-4005, 2011 (SCI-Expanded)
- VIII. **The differential quadrature solution of nonlinear reaction-diffusion and wave equations using several time-integration schemes**
Meral G., Tezer-Sezgin M.
International Journal for Numerical Methods in Biomedical Engineering, vol.27, no.4, pp.485-497, 2011 (SCI-Expanded)
- IX. **DRBEM solution of exterior nonlinear wave problem using FDM and LSM time integrations**
Meral G., Tezer-Sezgin M.
Engineering Analysis with Boundary Elements, vol.34, no.6, pp.574-580, 2010 (SCI-Expanded)
- X. **Differential quadrature solution of nonlinear reaction-diffusion equation with relaxation-type time integration**
Meral G., Tezer-Sezgin M.
International Journal of Computer Mathematics, vol.86, no.3, pp.451-463, 2009 (SCI-Expanded)

Articles Published in Other Journals

- I. **MATHEMATICAL ANALYSIS AND NUMERICAL SIMULATIONS FOR A NONLINEAR KLEIN GORDON EQUATION IN AN EXTERIOR DOMAIN**
Meral G.
COMMUNICATIONS FACULTY OF SCIENCES UNIVERSITY OF ANKARA-SERIES A1 MATHEMATICS AND STATISTICS, vol.73, no.3, pp.833-844, 2024 (ESCI)
- II. **Mathematical Analysis and Numerical Simulations for the Cancer Tissue Invasion Model**
Meral G., Yamanlar İ. Ç.
COMMUNICATIONS FACULTY OF SCIENCES UNIVERSITY OF ANKARA-SERIES A1 MATHEMATICS AND STATISTICS, vol.68, no.1, pp.371-391, 2019 (ESCI)
- III. **Numerical Solution of Drinfel'd Sokolov Wilson System Using Differential Quadrature and Finite**

Difference Methods

MERAL G.

Karaelmas Science and Engineering Journal, vol.9, no.2, pp.232-236, 2019 (Peer-Reviewed Journal)

IV. DRBEM solution of the acid-mediated tumour invasion model with time-dependent carrying capacities

Meral G.

European Journal of Computational Mechanics, vol.26, no.4, pp.430-442, 2017 (ESCI)

V. A multiscale model for acid mediated tumor invasion Therapy approaches

MERAL G., Stinner C., Surulescu C.

Journal of Coupled Systems and Multiscale Dynamics, vol.3, no.2, pp.135-142, 2015 (Peer-Reviewed Journal)

VI. Mathematical Analysis and Numerical Simulations for a System Modeling Acid Mediated Tumor Cell Invasion

MAERKL C., MERAL G., Surulescu C.

International Journal of Analysis, vol.2013, no.1, pp.1-15, 2013 (Peer-Reviewed Journal)

VII. Solution of the nonlinear diffusion equation using the dual reciprocity boundary element method and the relaxation type time integration scheme

Meral G.

WIT Transactions on Modelling and Simulation, vol.39, pp.133-140, 2005 (Peer-Reviewed Journal)

Books & Book Chapters

I. Heroines in Science History

Meral G.

in: A Comparative Study of Women Issues, S. G. Peschke, L. Peschke, Editor, Books on Demand, Hamburg, pp.219-231, 2018

Refereed Congress / Symposium Publications in Proceedings

I. A New Study on a Random Conformable Fractional System Modeling Acid-Mediated Tumor Cell Invasion

Meral G., Yazır T., Bekiryazıcı Z., Anaç H.

Approximation Theory and Special Functions ATSF 2024 Conference-8-th Series, Ankara, Turkey, 4 - 06 September 2024, pp.174

II. On the DRBEM-FDM Solution of a Cancer Invasion Model

Meral G.

Workshop in Honor of Münevver Tezer-Sezgin's 67-th Birthday, Ankara, Turkey, 19 - 20 April 2019, pp.19

III. Existence, Uniqueness and Permanence of the HSP70 synthesis model

Meral G., Pelen N. N.

International Conference on Applied Mathematics, Modeling and Life Sciences, İstanbul, Turkey, 3 May - 05 October 2018

IV. DQM Solution of Hirota-Satsuma Coupled KdV System

Meral G.

3rd International Conference on Engineering Technology and Applied Sciences, Skopje, Macedonia, 17 - 21 July 2018, pp.121-124

V. Heroines in Science History

Meral G.

II. International Women's Congress, Milan, Italy, 9 - 11 May 2018, pp.45

VI. Numerical Solution of a Cancer Invasion Model Using DRBEM and FDM

Meral G.

17-th International Conference Computational and Mathematical Methods in Science and Engineering, Cadiz, Spain, 4 - 08 July 2017, pp.1457-1466

- VII. **Dual Reciprocity Boundary Element Solution of a System Modeling Acid Mediated Tumor Cell Invasion**
Meral G.
International Conference on Boundary Element and Meshless Techniques, Ankara, Turkey, 11 - 13 July 2016, pp.99-106
- VIII. **On a multiscale model involving cell contractivity and its effects on tumor invasion**
Stinner C., Meral G., Surulescu C., Winkler M.
The 10th AIMS Conference on Dynamical Systems Differential Equations and Applications, Madrid, Spain, 7 - 11 July 2014, pp.40
- IX. **Mathematical Models for cancer cell invasion**
Meral G.
TKMD 1. Kadın Matematikçiler Çalıştayı, Kocaeli, Turkey, 2 - 04 May 2014, pp.5
- X. **On a multiscale Model Involving Cell Contractivity and its Effects on Tumor Invasion**
Meral G., Stinner C., Surulescu C.
International Conference Models in Population Dynamics and Ecology, Osnabrück, Germany, 26 - 29 August 2013, pp.28
- XI. **Mathematical analysis and numerical simulations for a system modeling acid-mediated tumor cell invasion**
Märkl C., Meral G., Surulescu C.
International Conference Models in Population Dynamics and Ecology, Osnabrück, Germany, 26 - 29 August 2013, pp.28
- XII. **Mathematical Modelling, Analysis and Numerical Simulations for the Influence of Heat Shock Proteins on Tumour Invasion**
Meral G., Surulescu C.
Mathways into Cancer, Ciudad-Real, Spain, 4 - 06 June 2012, pp.76
- XIII. **Mathematical modelling of the effect of heat shock proteins on tumour invasion**
Meral G., Surulescu C.
7. Ankara Matematik Günleri, Ankara, Turkey, 31 May - 01 June 2012, pp.111
- XIV. **DRBEM Solution of Exterior Nonlinear Wave Problem Using LSM Time Integration**
Meral G., Tezer M.
FEM & BEM Workshop, Ankara, Turkey, 26 May 2012, pp.1
- XV. **Mathematical Modeling and Numerical Simulations for the Influence of Heat Shock Proteins on Tumour Invasion**
Meral G., Surulescu C.
European Conference on Mathematical and Theoretical Biology, Krakow, Poland, 28 June - 02 July 2011, pp.652
- XVI. **On the DRBEM and DQM solutions of nonlinear reaction-diffusion equations with FEM time integration**
Tezer M., Meral G.
International Congress on Computational and Applied Mathematics, Leuven, Belgium, 5 - 09 July 2010, pp.1
- XVII. **Solution of Density Dependent Nonlinear Reaction-Diffusion Equation Using Differential Quadrature Method**
Meral G.
International Conference on Computational Mathematics, Tokyo, Japan, 26 - 28 May 2010, pp.1178-1183
- XVIII. **Solution of nonlinear reaction-diffusion equation by using differential quadrature method and different time integration schemes**
Meral G., Tezer M.
4. Ankara Matematik Günleri, Ankara, Turkey, 4 - 05 July 2009, pp.15
- XIX. **Solution of nonlinear reaction-diffusion equation by using dual reciprocity boundary element method with finite difference or least squares method**

Meral G., Tezer M.

International Conference on Boundary Element Techniques IX, Sevilla, Spain, 9 - 11 July 2008, pp.317-321

XX. Solution of the nonlinear scalar exterior wave equation using the dual reciprocity boundary element method

Meral G.

International Association for Boundary Element Methods 2006 Conference, Graz, Austria, 10 - 12 July 2006, pp.237-240

XXI. Solution of the nonlinear diffusion equation using the dual reciprocity boundary element method and the relaxation type time integration scheme

Meral G.

27-th World Conference on Boundary Elements and other Mesh Reduction Methods, Florida, United States Of America, 15 - 17 March 2005, pp.133-140

Supported Projects

MERAL G., Project Supported by Higher Education Institutions, DQM SOLUTION OF HIROTASATSUMA COUPLED KDV SYSTEM, 2018 - 2018

MERAL G., Project Supported by Higher Education Institutions, Numerical Solution of a Cancer Invasion Model Using DRBEM and FDM, 2017 - 2017

Meral G., Surulescu C., Other International Funding Programs, MATHEMATICAL MODELING, ANALYSIS AND NUMERICAL SIMULATIONS OF A MULTISCALE MODEL FOR THE ACID- MEDIATED TUMOR CELL INVASION (The project is supported by DAAD (German Academic Exchange Service) with the reinvitatiton scholarship programme for former scholarship holders), 2014 - 2014

Meral G., Surulescu C., Other International Funding Programs, Mathematical Modelling, Analysis and Numerical Simulations for the Influence of the Heat Shock Proteins on Tumour Invasion (The project is supported by DAAD (German Academic Exchange Service) with the reinvitatiton scholarship programme for former scholarship holders), 2010 - 2010

Scientific Refereeing

Communications Faculty of Sciences University of Ankara Series A2-A3: Physical Sciences and Engineering, Journal Indexed in ESCI, October 2023

Gazi University Journal of Science, Journal Indexed in ESCI, May 2021

COMPUTATIONAL & APPLIED MATHEMATICS, Journal Indexed in SCI-E, July 2020

APPLIED NUMERICAL MATHEMATICS, Journal Indexed in SCI-E, May 2020

APPLIED MATHEMATICS AND COMPUTATION, Journal Indexed in SCI-E, March 2020

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, June 2019

TURKISH JOURNAL OF MATHEMATICS, Journal Indexed in SCI-E, February 2019

MATHEMATICAL METHODS IN THE APPLIED SCIENCES, Journal Indexed in SCI-E, February 2019

Cogent Engineering, Journal Indexed in ESCI, September 2018

APPLIED MATHEMATICS AND COMPUTATION, Journal Indexed in SCI-E, December 2017

HACETTEPE JOURNAL OF MATHEMATICS AND STATISTICS, Journal Indexed in SCI-E, October 2017

Communications Faculty of Sciences University of Ankara Series A1, Journal Indexed in ESCI, October 2017

TURKISH JOURNAL OF MATHEMATICS, Journal Indexed in SCI-E, January 2017

APPLIED MATHEMATICS AND COMPUTATION, Journal Indexed in SCI-E, September 2016

TURKISH JOURNAL OF MATHEMATICS, Journal Indexed in SCI-E, December 2015

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, November 2015

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, TÜBİTAK, Turkey, June 2015
INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS, Journal Indexed in SCI-E, May 2015
MATHEMATICAL BIOSCIENCES, SCI Journal, March 2015
INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS, Journal Indexed in SCI-E, December 2010
ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS, SCI Journal, October 2005

Scientific Consultations

TÜBİTAK, Scientific Consultancy, Ankara Yıldırım Beyazıt University, Mühendislik ve Doğa Bilimleri Fakültesi, Matematik, Turkey, 2020 - 2023

Metrics

Publication: 39
Citation (WoS): 130
Citation (Scopus): 123
H-Index (WoS): 7
H-Index (Scopus): 7

Congress and Symposium Activities

TKMD 1. Kadın Matematikçiler Çalıştayı, Invited Speaker, Kocaeli, Turkey, 2014

Scholarships

DAAD, Reinvitation Programme for formerscholarship holders, Official Institutions of Foreign Countries, 2014 - 2014
Support Programme for the Abroad Research Stays of Academics, YOK, 2013 - 2013
LLP Erasmus Staff Mobility Programme, European Commission, 2013 - 2013
LLP Erasmus Staff Mobility Programme, European Commission, 2012 - 2012
DAAD, Reinvitation Programme for Former Scholarshipholders, Official Institutions of Foreign Countries, 2010 - 2010
DAAD, Sandwich Scholarship Programme, Official Institutions of Foreign Countries, 2006 - 2007
Yurt Dışı Araştırma Burs Programı, TÜBİTAK, 2006 - 2006

Awards

Meral G., Ankara Üniversitesi, Matematik Bölümü, Bölüm İkinciliği, Ankara Üniversitesi, Matematik Bölümü, June 2002