Asst. Prof. Merve Gürbüz Çaldağ

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Education Information

Doctorate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Graduate School Of Natural And Applied Sciences, Turkey 2012 - 2017
Undergraduate, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Mathematics, Turkey 2007 - 2012

Research Areas

Mathematics, Numerical Analysis

Academic Titles / Tasks

Assistant Professor, TED University, Faculty of Arts and Sciences, Mathematics, 2022 - Continues
Assistant Professor, Baskent University, Faculty of Economics and Administrative Sciences, department of management, 2018 - 2023

Academic and Administrative Experience

Deputy Head of Department, Baskent University, Faculty of Economics and Administrative Sciences, department of management, 2020 - 2022

Courses

Linear Algebra I, Undergraduate
Introduction to Probability Theory, Undergraduate
Advanced Calculus II, Undergraduate, 2022 - 2023
Differential Equations, Undergraduate, 2021 - 2022
Advanced Calculus II, Undergraduate, 2022 - 2023

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Solution of MHD-stokes flow in an L-shaped cavity with a local RBF-supported finite difference**
Çelik E., Gürbüz Çaldağ M.
Engineering Analysis with Boundary Elements, vol.158, pp.356-363, 2024 (SCI-Expanded)

II. **Streamline analysis of MHD flow in a double lid-driven cavity**
ÇELİK E., Gürbüz Çaldağ M.
Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, vol.238, no.1, pp.64-74, 2024 (SCI-Expanded)

III. **Stokes flow in lid-driven cavity under inclined magnetic field**
Gurbuz-Caldag M., Celik E.
ARCHIVES OF MECHANICS, vol.74, no.6, pp.549-564, 2022 (SCI-Expanded)

IV. **NUMERICAL STABILITY OF RBF APPROXIMATION FOR UNSTEADY MHD FLOW EQUATIONS**
Gurbuz M., Tezer-Sezgin M.
APPLIED AND COMPUTATIONAL MATHEMATICS, vol.18, no.2, pp.123-134, 2019 (SCI-Expanded)

V. **MHD Stokes flow and heat transfer in a lid-driven square cavity under horizontal magnetic field**
Gürbüz M., TEZER M.
Mathematical Methods in the Applied Sciences, vol.41, no.6, pp.2350-2359, 2018 (SCI-Expanded)

VI. **MHD convection flow in a constricted channel**
TEZER M., Gürbüz M.
Analele Stiintifice ale Universitatii Ovidius Constanta, Seria Matematica, vol.26, no.2, pp.267-283, 2018 (SCI-Expanded)

Articles Published in Other Journals

I. **The Impact of Inclined Magnetic Field on Streamlines in a Constricted Lid-Driven Cavity**
Çaldağ M., Çelik E.
SAKARYA UNIVERSITY JOURNAL OF SCIENCE, vol.28, no.1, pp.108-116, 2024 (Peer-Reviewed Journal)

II. **RBF SOLUTION OF MHD STOKES FLOW AND MHD FLOW IN A CONSTRICTED ENCLOSURE**
GÜRBÜZ M., TEZER M.
Turkish World Mathematical Society Journal of Applied and Engineering Mathematics, vol.11, no.1, pp.203-215, 2021 (Scopus)

III. **Numerical Solution of MHD Incompressible Convection Flow in Channels**
GÜRBÜZ M., TEZER M.
European Jorunal of Computational Mechanics, vol.28, no.5, pp.411-432, 2019 (Scopus)

IV. **Numerical solution and stability analysis of transient MHD duct flow**
TEZER M., GÜRBÜZ M.
Balıkesir Üniversitesi Fen Bilimleri Enstitüsü Dergisi, vol.20, no.3, pp.53-61, 2018 (Peer-Reviewed Journal)

V. **MHD Stokes flow in lid-driven cavity and backward-facing step channel**
GÜRBÜZ M., TEZER M.
European Journal of Computational Mechanics, vol.24, no.6, pp.279-301, 2015 (ESCI)

Books & Book Chapters

I. **Biological and Medical Models and Applications / Solution of MHD Flow with BEM Using Direct Radial Basis Function Interpolation**
GÜRBÜZ M., TEZER M.
in: Progress in Industrial Mathematics at ECMI 2018 , Istvan Farago, Ferenc Izsak, Peter L. Simon, Editor, Springer, pp.269-275, 2019

Refereed Congress / Symposium Publications in Proceedings

I. **RBF Solution of MHD Flow and Heat Transfer with Hall and Viscosity Parameters**
GÜRBÜZ ÇALDAĞ M.
6th International Conferences on Science and Technology Natural Science and Technology ICONST-NST 2023, Budva, Montenegro, 30 August - 01 September 2023, pp.8

II. **RBF SOLUTIONS OF STEADY FLOW IN A DOUBLE LID-DRIVEN CAVITY EXPOSED TO MAGNETIC FIELD**
ÇELİK E., GÜRBÜZ ÇALDAĞ M.
10th International Congress on Fundamental and Applied Sciences, İstanbul, Turkey, 6 - 08 June 2023

III. **MHD Flow in a Constricted Lid-driven Cavity**
GÜRBÜZ ÇALDAĞ M., ÇELİK E.
5th International E-Conference on Mathematical Advances and Applications ICOMAA 2022, İstanbul, Turkey, 11 May 2022, pp.131

IV. **IMPACTS OF INCLINED MAGNETIC FIELD ON STOKES FLOW**
GÜRBÜZ ÇALDAĞ M., ÇELİK E.
8th International Congress on Fundamental and Applied Sciences 2021 (ICFAS2021), Antalya, Turkey, 19 October 2021, pp.1143

V. **RBF Solution of MHD FLow in a Square Duct**
GÜRBÜZ M.
International Conference on Applied Mathematics in Engineering ICAME'21, Balıkesir, Turkey, 01 September 2021, pp.33

VI. **RBF Solution of the Natural Convection Flow of Micropolar Fluids**
GÜRBÜZ M., TEZER M.
International Conference on Boundary Element and Meshless Techniques BeTeq 2019, 22 - 24 July 2019

VII. **RBF Solution of MHD Convection Flow in a Lid-driven Cavity with an Obstacle**
GÜRBÜZ M., TEZER M.
Numerical Analysis and ComputationalFluid Dynamics: Workshop in Honor ofMünevver Tezer-Sezgin'xxs 67th Birthday, Ankara, Turkey, 19 - 20 April 2019

VIII. **Stability Analysis of Time Dependent MHD Flow Equations in a Rectangular Duct**
GÜRBÜZ M., TEZER M.
BEYOND: Workshop on Computational Science and Engineering, Ankara, Turkey, 20 - 21 October 2018

IX. **Stability of Unsteady MHD Flow in a Rectangular Duct**
TEZER M., GÜRBÜZ M.
International Conference on Applied Mathematics in Engineering ICAME 2018, Balıkesir, Turkey, 27 - 29 June 2018, pp.35

X. **Numerical Modelling of MHD Convection Flow in Cavities**
GÜRBÜZ M., TEZER M.
International Conference on Applied Mathematics in Engineering ICAME 2018, Balıkesir, Turkey, 27 - 29 June 2018, pp.34

XI. **Solution of MHD Flow with BEM Using Direct Radial Basis Function Interpolation**
GÜRBÜZ M., TEZER M.
20th European Conference onMathematics for Industry ECMI 2018, Budapest, Hungary, 18 - 22 June 2018, pp.370

XII. **Numerical Stability of RBF Approximation for Unsteady MHD Flow Equations**
GÜRBÜZ M., TEZER M.
International Conference on Applied Analysis and Mathematical Modeling ICAAMM 2017, İstanbul, Turkey, 3 - 07 July 2017, pp.135

XIII. **Numerical stability of RBF solution for unsteady full MHD flow equations**
GÜRBÜZ M., TEZER M.
International Workshop on Mathematical Methods in Engineering MME 2017, Ankara, Turkey, 27 - 29 April 2017, pp.77

XIV. **MHD Convection Flow in a Constricted Channel**

TEZER M., GÜRBÜZ M.
Eleventh Workshop On Mathematical Modelling of Environmental and Life Sciences Problems MMELSP 2016, Köstence, Romania, 12 - 16 October 2016, pp.28-29

XV. **RBF solution of incompressible MHD convection flow in a pipe**
GÜRBÜZ M., TEZER M.
Eleventh Workshop On Mathematical Modelling of Environmental and Life Sciences Problems MMELSP 2016, Köstence, Romania, 12 - 16 October 2016, pp.16

XVI. **MHD Stokes flow in a smoothly constricted rectangular enclosure**
GÜRBÜZ M., TEZER M.
International Conference on Boundary Element and Meshless Techniques BETEQ 2016, Ankara, Turkey, 11 - 13 July 2016, pp.73-78

XVII. **Natural convection MHD Stokes flow in a square cavity**
GÜRBÜZ M., TEZER M.
the 16th International Conference on Computational and Mathematical Methods in Science and Engineering CMMSE 2016, Cadiz, Spain, 4 - 09 July 2016, pp.615-623

XVIII. **RBF solution of convective heat transfer MHD flow**
GÜRBÜZ M.
III. Kadın Matematikçiler Derneği Çalıştayı, İzmir, Turkey, 27 - 29 May 2016, pp.39

XIX. **Lid-driven cavity and backward-facing step Stokes flow under an applied magnetic field**
GÜRBÜZ M., TEZER M.
Tenth UK Conference On Boundary Integral Methods UKBIM 2015, Brighton, England, 13 - 14 July 2015, pp.66-75

XX. **Two-dimensional Stokes flow of an electrically conducting fluid in a channel under uniform magnetic field**
GÜRBÜZ M., TEZER M.
International Conference on Boundary Element and Meshless Techniques BETEQ 2015, Valencia, Spain, 6 - 08 July 2015, pp.126-131