Prof. SERDAL PAMUK

Personal Information

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International Researcher IDs
ORCID: 0000-0002-7457-5873
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Education Information

Doctorate, Iowa State University of Science and Technology, Faculty Of Science And Arts , Applied Mathematics, United States Of America 1997 - 2000
Postgraduate, University of Nebraska-Lincoln, Faculty Of Science And Arts, Mathematics, United States Of America 1994 - 1997
Postgraduate, Marmara University, Faculty Of Arts And Sciences, Mathematics, Turkey 1990 - 1992
Undergraduate, Istanbul University, Faculty Of Science, Department Of Mathematics, Turkey 1984 - 1988

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Two Dimensional Models of Tumor Angiogenesis, Iowa State University Of Science And Technology, Faculty Of Science And Arts, Applied Mathematics, 2000
Postgraduate, Yarıklı Tasvirlerin Parametrik Gösterilişi, Marmara Üniversitesi, Fen Edebiyat Fakültesi, Matematik, 1992

Research Areas

Mathematics, Differential Equations, Numerical Analysis, Natural Sciences

Academic Titles / Tasks

Professor, Kocaeli University, Fen Edebiyat Fakültesi, Matematik, 2010 - Continues
Associate Professor, Kocaeli University, Fen Edebiyat Fakültesi, Matematik, 2005 - 2010
Assistant Professor, Kocaeli University, Fen Edebiyat Fakültesi, Matematik, 2000 - 2005

Academic and Administrative Experience

Head of Department, Kocaeli University, Fen Edebiyat Fakültesi, Matematik, 2020 - Continues
Fakülte Yönetim Kurulu Üyesi, Kocaeli University, Fen Edebiyat Fakültesi, Matematik, 2018 - Continues
Fakülte Kurulu Üyesi, Kocaeli University, Fen Edebiyat Fakültesi, Matematik, 2018 - Continues
Head of Department, Kocaeli University, Fen Edebiyat Fakültesi, Matematik, 2021 - 2024
Head of Department, Kocaeli University, Matematik, 2018 - 2021
Kocaeli Üniversitesi, REKTÖRLÜK, 2009 - 2014
Kocaeli Üniversitesi, Fen-Edebiyat Fakültesi, Matematik Bölümü, 2006 - 2009

Courses

Dinamik Sistemler, Postgraduate, 2023 - 2024
Integral Equations, Undergraduate, 2023 - 2024
Bilim Tarihi, Undergraduate, 2023 - 2024
İleri Diferensiyel Denklemler I , Postgraduate, 2023 - 2024

Advising Theses

Pamuk S., Covid-19 Hastalığının Matematiksel Modellemesi ve Sayısal Çözümleri, Postgraduate, S.Saldıroğlu(Student), 2022
Pamuk S., Bazı İntegral Dönüşümler ve Uygulamaları, Postgraduate, R.Subaşı(Student), 2022
Pamuk S., Pertürbasyon yöntemiyle diferansiyel denklemlerin çözümü, Postgraduate, M.KELEŞ(Student), 2019
Pamuk S., BAZI LİNEER OLMAYAN KISMİ DİFERANSİYEL DENKLEMLERİN ÇÖZÜM YÖNTEMLERİ, Postgraduate, G.MAVİTUNA(Student), 2018
Pamuk S., Tümör Anjiyogenezinde İki Boyutlu Matematiksel Modelin Analizi ve Sayısal Çözümü, Doctorate, İ.ÇAY(Student), 2018
Pamuk S., Diferansiyel denklemler ve matematiksel biyoloji, Postgraduate, B.BAJJAH(Student), 2016
Pamuk S., Tümör Anjiyogenezinde Bir Boyutlu Matematiksel Modelin Sayısal Çözümleri, Postgraduate, İ.ÇAY(Student), 2012
Pamuk S., Bir Boyutlu Tümör Modelinin Matematiksel Analizi ve Sayısal Çözümü, Postgraduate, E.ALTUNTAÇ(Student), 2009
Pamuk S., Matematik Modellerin Zamandan Bağımsız Çözümleri ve Uzun Zaman Davranışları, Postgraduate, A.GÜVEN(Student), 2004

Published journal articles indexed by SCI, SSCI, and AHCI

I. **A NUMERICAL PROOF THAT CERTAIN CELLS FOLLOW the TRAILS of the DIFFUSIONS of SOME CHEMICALS in the EXTRACELLULAR MATRIX**
ÇAY İ., PAMUK S.
Journal of Mechanics in Medicine and Biology, vol.21, 2021 (SCI-Expanded)

II. **A 2D mathematical model for tumor angiogenesis: The roles of certain cells in the extra cellular matrix**
PAMUK S., ÇAY İ., SAZCI A.
MATHEMATICAL BIOSCIENCES, vol.306, pp.32-48, 2018 (SCI-Expanded)

III. **Solutions of a Linearized Mathematical Model for Capillary Formation in Tumor Angiogenesis: An Initial Data Perturbation Approximation**
Pamuk S.
COMPUTATIONAL AND MATHEMATICAL METHODS IN MEDICINE, 2013 (SCI-Expanded)

IV. **He's homotopy perturbation method for continuous population models for single and interacting**

species
PAMUK S., PAMUK N.
COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.59, no.2, pp.612-621, 2010 (SCI-Expanded)

V. **On the qualitative analysis of the uniqueness of the movement of endothelial cells**
ALTUNTAC E., PAMUK S.
TURKISH JOURNAL OF MATHEMATICS, vol.34, no.3, pp.367-375, 2010 (SCI-Expanded)

VI. **A Review of Some Recent Results for the Approximate Analytical Solutions of Nonlinear Differential Equations**
Pamuk S.
MATHEMATICAL PROBLEMS IN ENGINEERING, 2009 (SCI-Expanded)

VII. **The method of lines for the numerical solution of a mathematical model for capillary formation: The role of endothelial cells in the capillary**
Pamuk S., ERDEM A.
APPLIED MATHEMATICS AND COMPUTATION, vol.186, no.1, pp.831-835, 2007 (SCI-Expanded)

VIII. **The method of lines for the numerical solution of a mathematical model for capillary formation: The role of tumor angiogenic factor in the extra-cellular matrix**
ERDEM A., Pamuk S.
APPLIED MATHEMATICS AND COMPUTATION, vol.186, no.1, pp.891-897, 2007 (SCI-Expanded)

IX. **A mathematical model for capillary formation and development in tumor angiogenesis: A review**
Pamuk S.
CHEMOTHERAPY, vol.52, no.1, pp.35-37, 2006 (SCI-Expanded)

X. **Solution of the porous media equation by Adomian's decomposition method**
Pamuk S.
PHYSICS LETTERS A, vol.344, pp.184-188, 2005 (SCI-Expanded)

XI. **An application for linear and nonlinear heat equations by Adomian's decomposition method**
Pamuk S.
APPLIED MATHEMATICS AND COMPUTATION, vol.163, no.1, pp.89-96, 2005 (SCI-Expanded)

XII. **The decomposition method for continuous population models for single and interacting species**
Pamuk S.
APPLIED MATHEMATICS AND COMPUTATION, vol.163, no.1, pp.79-88, 2005 (SCI-Expanded)

XIII. **Steady-state analysis of a mathematical model for capillary network formation in the absence of tumor source**
Pamuk S.
MATHEMATICAL BIOSCIENCES, vol.189, no.1, pp.21-38, 2004 (SCI-Expanded)

XIV. **Qualitative analysis of a mathematical model for capillary formation in tumor angiogenesis**
Pamuk S.
MATHEMATICAL MODELS & METHODS IN APPLIED SCIENCES, vol.13, no.1, pp.19-33, 2003 (SCI-Expanded)

XV. **Mathematical modeling of capillary formation and development in tumor angiogenesis: Penetration into the stroma**
LEVINE H., Pamuk S., SLEEMAN B., NILSEN-HAMILTON M.
BULLETIN OF MATHEMATICAL BIOLOGY, vol.63, no.5, pp.801-863, 2001 (SCI-Expanded)

Articles Published in Other Journals

I. **Mathematical Analysis and Numerical Solution of a Boundary Value Problem for the Covid-19 SIR Model**
Saldiroğlu S., Pamuk S.
PROOF, vol.4, pp.11-17, 2024 (Peer-Reviewed Journal)

II. **On the Stability Analysis of the Steady-State Solution of a Tumor Angiogenesis Model**
Pamuk S.

New Trends in Mathematical Sciences, vol.11, no.4, pp.37-43, 2023 (Peer-Reviewed Journal)

III. **Decomposition Solution of a Mathematical Model for Capillary Formation**
Pamuk S.
New Trends in Mathematical Sciences, vol.11, no.4, pp.44-49, 2023 (Peer-Reviewed Journal)

IV. **A Numerical Comparison of Solutions of Non-Linear Initial Value Problems of First Order**
Pamuk S.
Communication in Mathematical Modeling and Applications, vol.6, no.3, pp.1-8, 2021 (Peer-Reviewed Journal)

V. **Antireduction Method for the Exact Solutions of the Porous Media Equation**
Pamuk S.
Communication in Mathematical Modeling and Applications, vol.6, no.1, pp.1-8, 2021 (Peer-Reviewed Journal)

VI. **Laplace transform method for logistic growth in a population and predator models**
Pamuk S., Soylu N.
New Trends in Mathematical Sciences, vol.8, no.3, pp.9-17, 2020 (Peer-Reviewed Journal)

VII. **Perturbation solutions of a mathematical model for determining the roles of Endothelial, pericyte and macrophage cells in the capillary**
Pamuk S., Keleş M.
New Trends in Mathematical Sciences, vol.8, no.1, pp.58-70, 2020 (Peer-Reviewed Journal)

VIII. **Perturbation Solutions of a Mathematical Model in Tumor Angiogenesis**
KELEŞ M., PAMUK S.
Kocaeli Journal of Science and Engineering, vol.2, no.2, pp.45-48, 2019 (Peer-Reviewed Journal)

IX. **A mathematical analysis of a 2D model for tumorangiogenesis: An initial data perturbation approximation**
PAMUK S., çay i.
Communication in Mathematical Modeling and Applications, vol.3, no.1, pp.13-27, 2018 (Peer-Reviewed Journal)

X. **STABILITY AND HOPF BIFURCATION ANALYSIS OF A MATHEMATICALMODEL IN TUMOR ANGIOGENESIS**
PAMUK S., çay i.
Anadolu University Journal of Science and Technology A- Applied Sciences and Engineering, vol.19, no.1, pp.50-57, 2018 (Peer-Reviewed Journal)

XI. **Turing Analysis of a Mathematical Model for Interaction between Tumor Cell and Its Inhibitor**
PAMUK S., ÇAY İ.
Academic Journal of Applied Mathematical Sciences, 2017 (Peer-Reviewed Journal)

XII. **NUMERICAL SOLUTION OF A 2D-DIFFUSION REACTION PROBLEM MODELLING THE DENSITY OF DI-VACANCIES AND VACANCIES IN A METAL**
PAMUK S.
TWMS JOURNAL OF APPLIED AND ENGINEERING MATHEMATICS, vol.7, no.1, pp.165-172, 2017 (ESCI)

XIII. **Steady State Analysis of a Two Dimensional Model for Tumor Angiogenesis in the Absence of Endothelial Cell Proliferation**
PAMUK S., BAJJAH b.
academic jornal of applied mathematical sciences, vol.2, pp.102-108, 2016 (Peer-Reviewed Journal)

XIV. **Self Similar Asymptotics for Linear and Nonlinear Mathematical Models of Tumor Angiogenesis: A Review**
PAMUK S., ÇAY İ.
COMMUNICATIONS FACULTY OF SCIENCES UNIVERSITY OF ANKARA-SERIES A1 MATHEMATICS AND STATISTICS, 2014 (Peer-Reviewed Journal)

XV. **Solution of two-dimensional heat and mass transfer equation with power-law temperature-dependent thermal conductivity**
PAMUK S., PAMUK N.
TWMS J. App. Eng. Math, vol.4, 2014 (Peer-Reviewed Journal)

XVI. **The method of lines for the numerical solution of a mathematical model in the initiation of angiogenesis**

PAMUK S., çay i.
TWMS J. App. Eng, vol.3, 2013 (Peer-Reviewed Journal)

XVII. **On the Stability of the Steady-State Solutions of Cell Equations in a Tumor Growth Model**
ÇAY İ., PAMUK S.
AIP Conference Proceedings, 2012 (Peer-Reviewed Journal)

XVIII. **Mathematical Modeling of Tumor Angiogenesis and the Action of Angiostatin as a Protease Inhibitor**
A LEVİNE H., D SLEEMAN B., N HAMİLTON M., PAMUK S.
Journal of Theoretical Medicine, vol.2, pp.133-145, 2002 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

I. **PERTURBATION SOLUTIONS OF A MATHEMATICAL MODEL IN TUMOR ANGIOGENESIS**
KELEŞ M., PAMUK S.
2nd INTERNATIONAL CONFERENCE ON MATHEMATICAL ADVANCES AND ITS APPLICATIONS, İstanbul, Turkey, 3 - 05 May 2019

II. **A Mathematical Analysis of a Model in Capillary Formation: The Roles of Endothelial, Pericyte and Macrophages in the Initiation of Angiogenesis**
Pamuk S., Çay I.
20th World Academy of Science, Engineering and Technology Conference, Paris, France, 19 - 20 February 2018, vol.20, pp.1600

III. **A Mathematical Analysis of a 2D Model for Tumor Angiogenesis: An Initial Data Perturbation Approximation**
PAMUK S., ÇAY İ.
International Conference on Applied Analysis and Mathematical Modelling, 3 - 07 July 2017

IV. **Exact Solutions of Some Non-Linear Partial Differential Equations**
MAVİTUNA g., PAMUK S.
International Conference on Applied Analysis and Mathematical Modelling (ICAAMM 2017), İstanbul, Turkey, 3 - 07 July 2017, pp.45

V. **A 2D Mathematical Model for Tumor Angiogenesis: The Roles of Endothelials, Pericytes and Macrophages in the ECM**
Pamuk S., Çay İ., Sazcı A.
BIT's 10th Annual World Cancer Congress-2017, Barcelona, Spain, 19 - 21 May 2017

VI. **Stability and Hopf Bifurcation Analysis of a Mathematical Model in Tumor Angiogenesis**
ÇAY İ., PAMUK S.
INTERNATIONAL CONFERENCE ON MATHEMATICS AND ENGINEERING, 10 - 12 May 2017

VII. **Turing analysis of a mathematical model for interaction between tumor cells and inhibitor**
İrem C., PAMUK S.
International Congress on Fundamental and Applied Sciences, İstanbul, Turkey, 22 - 26 August 2016

VIII. **Self Similar Asymptotics for Linear and Nonlinear Mathematical Models of Tumor Angiogenesis: A Review**
PAMUK S., ÇAY İ.
International Conference on Nonlinear Differential and Difference Equations: Recent Developments and Applications, 27 - 30 May 2014

IX. **On the Stability of the Steady-State Solutions of Cell Equations in a Tumor Growth Model**
Atac I., PAMUK S.
1st International Conference on Analysis and Applied Mathematics (ICAAM), Gümüşhane, Turkey, 18 - 21 October 2012, vol.1470, pp.172-175

X. **The Method of Lines for the Numerical Solutions of a Mathematical Model for Capillary Formation The Roles of Endothelial Pericytes and Macrophage Cells in the Capillary**
PAMUK S., çay i.

5th Annual International Conference on Mathematics, Statistics Mathematical Education, Atina, Greece, 13 - 16 June 2011

XI. **Stability analysis of the steady-state solution of a mathematical model in tumor angiogenesis**
Pamuk S., GURBUZ A.
International Workshop on Global Analysis, Ankara, Turkey, 15 - 17 April 2004, vol.729, pp.369-373

Supported Projects

PAMUK S., TUBITAK Project, Tümör Anjiyogenezinde İki Boyutlu Matematiksel Modelin Analizi Ve Sayisal Çözümü, 2016 - 2018

Pamuk S., Project Supported by Higher Education Institutions, Solution Of Linear and Non-Linear Partial Differantial Equations By Adomian's Decomposition Method, 2003 - 2005

Activities in Scientific Journals

Edelweiss Applied Science and Technology, Editor, 2022 - Continues

Metrics

Publication: 44
Citation (WoS): 396
Citation (Scopus): 402
H-Index (WoS): 8
H-Index (Scopus): 8

Awards

Pamuk S., Best Presentation Award, World Academy Of Science Engineering And Technology, Fransa, Paris, February 2018

Non Academic Experience

Kocaeli Üniversitesi
Marmara Üniversitesi