

Assoc. Prof. Mehmet Giyas Sakar

Personal Information

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Address: YYÜ Fen Fakültesi Matematik Bölümü

Education Information

Doctorate, Van Yüzüncü Yil University, Fen Bilimleri Enstitüsü, Matematik, Turkey 2008 - 2012

Postgraduate, Van Yüzüncü Yil University, Fen Bilimleri Enstitüsü, Matematik, Turkey 2004 - 2007

Undergraduate, Dicle University, Faculty Of Education, Matematik, Turkey 1996 - 2000

Foreign Languages

Russian, B1 Intermediate

English, B2 Upper Intermediate

Dissertations

Doctorate, Kesirli mertebeli diferansiyel denklemlerin analitik ve nümerik çözümleri, Van Yüzüncü Yil University, Fen Bilimleri Enstitüsü, Matematik, 2012

Postgraduate, Pseudo-parabolik diferansiyel denklemler için fark metotlarında enerji eşitsizlikleri, Van Yüzüncü Yil University, Fen Bilimleri Enstitüsü, Matematik, 2007

Research Areas

Mathematics, Numerical Analysis, Natural Sciences

Academic Titles / Tasks

Associate Professor, Van Yüzüncü Yil University, Fen Fakültesi, Matematik Bölümü, 2018 - Continues

Assistant Professor, Van Yüzüncü Yil University, Fen Fakültesi, Matematik Bölümü, 2013 - 2018

Research Assistant, Van Yüzüncü Yil University, Fen Fakültesi, Matematik Bölümü, 2005 - 2013

Courses

Fonksiyonel Analiz-II, Undergraduate, 2015 - 2016, 2016 - 2017

Kesir Mertebeli Diferansiyel Denklemler-II, Postgraduate, 2014 - 2015, 2015 - 2016, 2016 - 2017

Nümerik Analiz-I, Undergraduate, 2017 - 2018

Lineer Olmayan Nümerik Analiz-II, Postgraduate, 2014 - 2015, 2015 - 2016, 2016 - 2017

Kompleks fonksiyonlar Teorisi-I, Undergraduate, 2017 - 2018
Matematik, Undergraduate, 2015 - 2016, 2016 - 2017, 2017 - 2018
Kesir Mertebeli Diferansiyel Denklemler-I, Postgraduate, 2014 - 2015, 2016 - 2017
Maple İle Nümerik Analiz, Postgraduate, 2016 - 2017
Lineer Olmayan Nümerik Analiz-I, Postgraduate, 2014 - 2015, 2015 - 2016, 2016 - 2017
Uygulamalı Matematik II, Undergraduate, 2014 - 2015
Fonksiyonel Analiz-I, Undergraduate, 2015 - 2016
Kesir Mertebeli Diferansiyel Denklemler-I, Postgraduate, 2015 - 2016
Uygulamalı Matematik I, Undergraduate, 2014 - 2015

Advising Theses

Sakar M. G. , Kesir mertebeli kısmi diferansiyel denklemlerin homotopi analiz metodu ile nümerik çözümleri, Postgraduate, A.ALKAN(Student), 2019
Sakar M. G. , Kesir mertebeli türev içeren bazı kısmi türevli diferansiyel denklemlerin doğuran çekirdekli Hilbert uzayı metodu ile nümerik çözümlerinin incelenmesi, Doctorate, O.SALDIR(Student), 2018
Sakar M. G. , Singüler Pertürbe Özellikli Konveksiyon-Difüzyon Denkleminin Asimptotik Açılım ve Simplified Reproducing Kernel Hilbert Space Metoduyla Nümerik Çözümleri, Postgraduate, F.AYDIN(Student), 2017
Sakar M. G. , Lineer olmayan kesir mertebeli kısmi diferansiyel denklemlerin nümerik çözümü için yeni bir yaklaşım, Postgraduate, B.Hamad(Student), 2016

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **A New Reproducing Kernel Approach for Nonlinear Fractional Three-Point Boundary Value Problems**
Sakar M. G. , Saldır O.
FRACTAL AND FRACTIONAL, vol.4, no.4, 2020 (Journal Indexed in SCI)
- II. **Numerical Solution of Fractional Order Burgers' Equation with Dirichlet and Neumann Boundary Conditions by Reproducing Kernel Method**
Saldır O., Sakar M. G. , Erdoğan F.
FRACTAL AND FRACTIONAL, vol.4, no.2, 2020 (Journal Indexed in SCI)
- III. **Novel design of Morlet wavelet neural network for solving second order Lane-Emden equation**
Sabir Z., Wahab H. A. , Umar M., Sakar M. G. , Raja M. A. Z.
MATHEMATICS AND COMPUTERS IN SIMULATION, vol.172, pp.1-14, 2020 (Journal Indexed in SCI)
- IV. **A novel iterative solution for time-fractional Boussinesq equation by reproducing kernel method**
Sakar M. G. , Saldır O.
JOURNAL OF APPLIED MATHEMATICS AND COMPUTING, 2020 (Journal Indexed in SCI)
- V. **Numerical solution of time-fractional Kawahara equation using reproducing kernel method with error estimate**
Saldır O., Sakar M. G. , Erdoğan F.
COMPUTATIONAL & APPLIED MATHEMATICS, vol.38, no.4, 2019 (Journal Indexed in SCI)
- VI. **A Novel Technique for Fractional Bagley-Torvik Equation**
Sakar M. G. , Saldır O., AKGÜL A.
PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES INDIA SECTION A-PHYSICAL SCIENCES, vol.89, no.3, pp.539-545, 2019 (Journal Indexed in SCI)
- VII. **An iterative approximation for time-fractional Cahn-Allen equation with reproducing kernel method**
Sakar M. G. , Saldır O., Erdoğan F.
COMPUTATIONAL & APPLIED MATHEMATICS, vol.37, no.5, pp.5951-5964, 2018 (Journal Indexed in SCI)
- VIII. **Improving Variational Iteration Method with Auxiliary Parameter for Nonlinear Time-Fractional**

Partial Differential Equations

Sakar M. G. , Saldır O.

JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS, vol.174, no.2, pp.530-549, 2017 (Journal Indexed in SCI)

- IX. **Analytical Approximate Solutions of (n+1)-Dimensional Fractal Heat-Like and Wave-Like Equations**
Acan O., Baleanu D., Al Qurashi M. M. , Sakar M. G.
ENTROPY, vol.19, no.7, 2017 (Journal Indexed in SCI)
- X. **On solutions of fractional Riccati differential equations**
Sakar M. G. , Akgül A., Baleanu D.
ADVANCES IN DIFFERENCE EQUATIONS, 2017 (Journal Indexed in SCI)
- XI. **Iterative reproducing kernel Hilbert spaces method for Riccati differential equations**
Sakar M. G.
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.309, pp.163-174, 2017 (Journal Indexed in SCI)
- XII. **Numerical solution of time-fractional nonlinear PDEs with proportional delays by homotopy perturbation method**
Sakar M. G. , Uludağ F., Erdoğan F.
APPLIED MATHEMATICAL MODELLING, vol.40, pp.6639-6649, 2016 (Journal Indexed in SCI)
- XIII. **Alternative variational iteration method for solving the time-fractional Fornberg-Whitham equation**
Sakar M. G. , Ergoren H.
APPLIED MATHEMATICAL MODELLING, vol.39, no.14, pp.3972-3979, 2015 (Journal Indexed in SCI)
- XIV. **The homotopy analysis method for solving the time-fractional Fornberg-Whitham equation and comparison with Adomian's decomposition method**
Sakar M. G. , Erdoğan F.
APPLIED MATHEMATICAL MODELLING, vol.37, pp.8876-8885, 2013 (Journal Indexed in SCI)
- XV. **Variational iteration method for the time-fractional Fornberg-Whitham equation**
Sakar M. G. , Erdoğan F., YILDIRIM A.
COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.63, no.9, pp.1382-1388, 2012 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **Numerical investigations to design a novel model based on the fifth order system of Emden-Fowler equations**
Zulqurnain S., Sakar M. G. , Yeskindirova M., Saldır O.
THEORETICAL AND APPLIED MECHANICS LETTERS, vol.10, no.5, pp.333-342, 2020 (Journal Indexed in ESCI)
- II. **A finite difference method on layer-adapted mesh for singularly perturbed delay differential equations**
Erdoğan F., Sakar M. G. , Saldır O.
Applied Mathematics and Nonlinear Sciences , vol.5, no.1, pp.425-436, 2020 (Refereed Journals of Other Institutions)
- III. **A Hybrid Method for Singularly Perturbed Convection–Diffusion Equation**
Sakar M. G. , Saldır O., Erdoğan F.
International Journal of Applied and Computational Mathematics, vol.5, no.5, 2019 (Refereed Journals of Other Institutions)
- IV. **Numerical Solution of Fractional Bratu Type Equations with Legendre Reproducing Kernel Method**
Sakar M. G. , Saldır O., Akgül A.
International Journal of Applied and Computational Mathematics, vol.4, 2018 (Refereed Journals of Other Institutions)
- V. **A quasilinearization technique for the solution of singularly perturbed delay differential equation**
Erdoğan F., Sakar M. G.
MATHEMATICS in NATURAL SCIENCE, vol.2, pp.1-7, 2018 (Refereed Journals of Other Institutions)

VI. Numerical solution of neutral functional-differential equations with proportional delays

Sakar M. G.

AN INTERNATIONAL JOURNAL OF OPTIMIZATION AND CONTROL: THEORIES & APPLICATIONS, vol.7, no.2, pp.186-194, 2017 (Refereed Journals of Other Institutions)

Books & Book Chapters

I. Boundary Value Problems for Impulsive Fractional Differential Equations with Nonlocal Conditions

Ergören H., Sakar M. G.

in: Advances in Applied Mathematics and Approximation Theory, Anastassiou, G. A., Duman O., Editor, Springer, London/Berlin, New York, pp.283-297, 2013

Refereed Congress / Symposium Publications in Proceedings

I. Fitted Difference Schemes for Delay Convection-Diffusion Problems with Small Parameter

Erdoğan F., SAKAR M. G., Saldır O.

9. International Youth Science Forum Litteris et Artibus, Lviv, Ukraine, 21 - 23 November 2019, pp.65-68

II. LAYER ADAPTED MESHES FOR SINGULARLY PERTURBED CONVECTION-DIFFUSION PROBLEM WITH DELAY

Erdoğan F., SAKAR M. G., SALDIR O.

4th International Conference on Computational Mathematics and Engineering Sciences, Antalya, Turkey, 20 - 22 May 2019, pp.148

III. REPRODUCING KERNEL METHOD WITH CHEBYSHEV POLYNOMIALS FOR FRACTIONAL TWO-POINT BOUNDARY VALUE PROBLEM

Sakar M. G., SALDIR O., Erdoğan F.

4th International Conference on Computational Mathematics and Engineering Sciences, Antalya, Turkey, 20 - 22 May 2019, pp.200

IV. A NEW NUMERICAL SOLUTION FOR SINGULARLY PERTURBED BOUNDARY VALUE PROBLEMS

SALDIR O., Sakar M. G., Erdoğan F.

4th International Conference on Computational Mathematics and Engineering Sciences, Antalya, Turkey, 20 - 22 May 2019, pp.56

V. A numerical approach for time-fractional Kawahara equation with reproducing kernel method

Saldır O., Sakar M. G., Erdoğan F.

2nd International Conference on Pure and Applied Mathematics (ICPAM-VAN 2018), Van, Turkey, 11 - 13 September 2018, pp.117

VI. Reproducing kernel method with Bernstein polynomials for fractional boundary value problems

Sakar M. G., Saldır O., Erdoğan F.

2nd International Conference on Pure and Applied Mathematics (ICPAM-VAN 2018), Van, Turkey, 11 - 13 September 2018, pp.116

VII. An Iterative Approximation for Time-Fractional Clannish Random Walker's Parabolic Equation in Reproducing Kernel Space

Sakar M. G., Erdoğan F., Saldır O.

7TH INTERNATIONAL EURASIAN CONFERENCE ON MATHEMATICAL SCIENCES AND APPLICATIONS, Kiev, Ukraine, 28 - 31 August 2018, pp.116

VIII. Numerical Methods for the Solution of Delay Differential Equations with Small Parameter

Erdoğan F., Çelik E., Sakar M. G.

7TH INTERNATIONAL EURASIAN CONFERENCE ON MATHEMATICAL SCIENCES AND APPLICATIONS, Kiev, Ukraine, 28 - 31 August 2018, pp.102

IX. Reproducing Kernel Method for Time Fractional Allen- Cahn Equation

Saldır O., Sakar M. G. , Erdoğan F.

3rd International Conference on Computational Mathematics and Engineering Sciences, Girne, Cyprus (Kkct), 4 - 06 May 2018, pp.2-3

- X. **Reproducing Kernel Method for Time Fractional Advection equation**
SAKAR M. G. , SALDIR O., ERDOĞAN F.
3rd International Conference on Computational Mathematics and Engineering Sciences, Girne, Cyprus (Kkct), 4 - 06 May 2018, pp.1-3
- XI. **Uniform Difference Schemes for Singularly Perturbed Delay Differential Equations with Delay**
Erdoğan F., Sakar M. G. , Saldır O.
3rd International Conference on Computational Mathematics and Engineering Sciences, Girne, Cyprus (Kkct), 4 - 06 May 2018, pp.1-2
- XII. **A Fitted Numerical Method for Singularly Perturbed Integro Differential Equations with Delay**
Erdoğan F., Sakar M. G.
7. International Youth Science Forum Litteris et Artibus, Lviv, Ukraine, 23 - 25 November 2017, pp.422-424
- XIII. **Numerical solution of singularly perturbed convection-diffusion equations**
Sakar M. G. , Erdoğan F.
7. International Youth Science Forum Litteris et Artibus, Lviv, Ukraine, 23 - 25 November 2017, pp.425-427
- XIV. **Uniform Numerical Methods for Singularly Perturbed Integro-Differential Equations With Delay**
Erdoğan F., Sakar M. G. , Saldır O.
Ukrainian Conference on Applied Mathematics, Lviv, Ukraine, 28 - 30 September 2017, pp.1
- XV. **A new numerical approach for fractional boundary value problems**
Saldır O., Sakar M. G.
Cucasian Mathematics Conference II (CMC II), Van, Turkey, 22 - 24 August 2017, pp.121-122
- XVI. **Higher Order Difference Schemes for Singularly Perturbed Delay Differential Equations with Delay**
Erdoğan F., Sakar M. G. , Saldır O.
, The 2st International Symposium on Computational Mathematics and Engineering Sciences, İstanbul, Turkey, 20 - 22 May 2017, pp.1
- XVII. **Non uniform haat wavelet method for singularly perturbed convection diffusion equations**
Sakar M. G. , Saldır O., Erdoğan F.
The 2nd International Symposium on Computational Mathematics and Engineering Sciences, İstanbul, Turkey, 20 - 22 May 2017, pp.1
- XVIII. **Legendre Reproducing Kernel Method for Fractional Two Point Boundry Value Problem**
Saldır O., Sakar M. G. , Erdoğan F.
The 2nd International Symposium on Computational Mathematics and Engineering Sciences, İstanbul, Turkey, 20 - 22 May 2017, pp.1
- XIX. **An Iterative Reproducing Kernel Method for Time and Space Fractional Burgers Equation**
Saldır O., Sakar M. G.
International Workshop on Mathematical Methods in Engineering, Ankara, Turkey, 27 - 29 April 2017, pp.118
- XX. **A New Technique for Numerical Solution of Fractional BVP's**
Sakar M. G. , AKGÜL A., Saldır O.
International Workshop on Mathematical Methods in Engineering, Ankara, Turkey, 27 - 29 April 2017, pp.117
- XXI. **Numerical Solution of Fractional Bratu Type Equation by Legendre-Reproducing Kernel Method**
Sakar M. G. , AKGÜL A., Saldır O.
International Workshop on Mathematical Methods in Engineering, Ankara, Turkey, 27 - 29 April 2017, pp.117
- XXII. **Numerical solution of singularly perturbed convection-diffusion problems in the reproducing kernel space**
Sakar M. G.
International Conference on Mathematics and Mathematics Education (ICMME-2016), Elazığ, Turkey, 12 - 14 May 2016, pp.372
- XXIII. **Reproducing kernel method for fractional Riccati differential equations**
Sakar M. G.

The 1st International Symposium on Computational Mathematics & Engineering Sciences, Errachidia, Morocco, 3 - 06 March 2016, pp.48-49

- XXIV. **Numerical solution of fractional Bagley-Torvik equation in the reproducing kernel space**
Sakar M. G.
The 1st International Symposium on Computational Mathematics & Engineering Sciences (CMES-2016), Errachidia, Morocco, 3 - 06 March 2016, pp.24
- XXV. **HOMOTOPY PERTURBATION METHOD FOR TIME-FRACTIONAL PDEs WITH PROPORTIONAL DELAYS**
Saldır O., Sakar M. G.
Mathematical Analysis, Differential Equations and their Applications (MADEA 7), Baku, Azerbaijan, 8 - 13 September 2015, pp.147
- XXVI. **Improving Homotopy Analysis of Method with Residual Error Function for Neutral Functional-Differential Equations with Proportional Delays**
Sakar M. G., ERDOĞAN F., BULUT H.
MADEA-7, Baku, Azerbaijan, 8 - 13 September 2015, pp.147
- XXVII. **A COMBINATION OF VIM AND ASYMPTOTIC EXPANSION FOR SINGULARLY PERTURBED CONVECTION-DIFFUSION PROBLEM**
Saldır O., Sakar M. G.
INTERNATIONAL CONFERENCE ON PURE AND APPLIED MATHEMATICS (ICPAM 2015), Van, Turkey, 25 - 28 August 2015, pp.116
- XXVIII. **A fitted numerov method for singularly perturbed reaction-diffusion equations**
Erdoğan F., SAKAR M. G., SALDIR O.
International Conference on Pure and Applied, Van, Turkey, 25 - 28 August 2015, pp.1
- XXIX. **An exponential fitted method for singularly perturbed reactin-diffusion equations**
SAKAR M. G., Erdoğan F., Saldır O.
International Conference on Pure and Applied, Van, Turkey, 25 - 28 August 2015, pp.10
- XXX. **A NEW NUMERICAL APPROACH FOR SOLVING TIME-FRACTIONAL PARTIAL DIFFERENTIAL EQUATIONS**
Sakar M. G., Saldır O.
INTERNATIONAL CONFERENCE ON PURE AND APPLIED MATHEMATICS (ICPAM 2015), Van, Turkey, 25 - 28 August 2015, pp.115
- XXXI. **On the numerical solution of singularly perturbed reaction-diffusion equations**
Saldır O., SAKAR M. G., Erdoğan F.
International Conference on Differential and Difference Equations & Applications, Lizbon, Portugal, 18 - 22 May 2015, pp.84
- XXXII. **A new method for solving time fractional partial differential equations**
Erdoğan F., Yamaç K., SAKAR M. G.
International Conference on Differential and Difference Equations & Applications, Lizbon, Portugal, 18 - 22 May 2015, pp.74-75
- XXXIII. **A novel approach to solution of singularly perturbed convection-diffusion problem**
Erdoğan F., Yamaç K., SAKAR M. G., Saldır O.
International Conference on Differential and Difference Equations & Applications, Lizbon, Portugal, 18 - 22 May 2015, pp.106-107
- XXXIV. **Numerical Methods on a Shishkin Mesh for Singuarly Perturbed Delay Differential Equations**
Erdoğan F., Sakar M. G., Saldır O.
3. INTERNATIONAL EURASIAN CONFERENCE ON MATHEMATICAL SCIENCES AND APPLICATIONS, Vienna, Austria, 25 - 28 August 2014, pp.187
- XXXV. **Boundary value problems for impulsive fractional differential equations with non-local conditions**
Ergören H., Sakar M. G.
AMAT 2012-International Conference on Applied Mathematics & Approximation Theory, Ankara, Turkey, 17 - 20 May 2012, pp.53
- XXXVI. **Alternative variational iteration method to solve the time-fractional Fornberg-Whitham equation**

Sakar M. G. , Ergören H.

AMAT 2012-International Conference on Applied Mathematics & Approximation Theory, Ankara, Turkey, 17 - 20 May 2012, pp.68

Supported Projects

Sakar M. G. , Project Supported by Higher Education Institutions, Numerical Solution of Singularly Perturbed Convection Diffusion Equations, 2017 - 2018

Activities in Scientific Journals

Mathematics in Natural Science (Math. Nat. Sci.), Committee Member, 2016 - Continues

Nonlinear Science Letters A, Committee Member, 2016 - Continues

Scientific Refereeing

Representation for the reproducing kernel Hilbert space method for a nonlinear system, SCI Journal, December 2017

A numerical approach based on the reproducing kernel Hilbert space for solving a class of boundary value optimal control problems, SCI Journal, October 2017

On solutions to the second order partial differential equations by two accurate methods" for Numerical Methods for Partial Differential Equations., SCI Journal, October 2017

An Accurate Technique for Nonlinear Systems of High-Order Boundary Value Problems, SCI Journal, February 2017

Homotopy Analysis Method for solving MHD free convection flow from a cooling sheet, Other journals, November 2016

On the solutions of electrohydrodynamic flow within reproducing kernel method, SCI Journal, November 2016

The Exact Solutions of The Nonlinear Fractional Partial Differential Equations, Other Indexed Journal, July 2016

Edit Congress and Symposium Activities

7th International Youth Science Forum "Litteris Et Artibus", Attendee, L`Viv, Ukraine, 2017

Caucasian Mathematics Conference II, Attendee, Van, Turkey, 2017

The Second International Conference on Computational Mathematics and Engineering Sciences (CMES2017), Attendee, İstanbul, Turkey, 2017

The Second International Conference on Computational Mathematics and Engineering Sciences (CMES2017), Session Moderator, İstanbul, Turkey, 2017

International Workshop on Mathematical Methods in Engineering (MME2017), Attendee, Ankara, Turkey, 2017

International Conference on Mathematics and Mathematics Education (ICMME-2016), Attendee, Elazığ, Turkey, 2016

CMES 2016, Invited Speaker, Miknas, Morocco, 2016

The 1st International Symposium on Computational Mathematics & Engineering Sciences (CMES-2016), Attendee, Errachidia / Morocco, Morocco, 2016

MADEA-7, Attendee, Baku, Azerbaijan, 2015

International Conference on Differential and Difference Equations and Applications 2015, Attendee, Lisboa, Portugal, 2015

Citations

Total Citations (WOS):312

h-index (WOS):9

Non Academic Experience

Other Public Institution, Milli Eğitim Bakanlıđı