

MURAT KARAÇAYIR RES. ASST. PHD

Email : mkaracayir@akdeniz.edu.tr

Office Phone : <u>+90 242 227 4400</u> Extension: 3814 Address : Akdeniz Üniversitesi Fen Fakültesi B Blok A1-8 Kampus/ANTALYA International Researcher IDs ORCID: 0000-0001-6230-3638 Yoksis Researcher ID: 121936



Learning Knowledge

| Doctorate 2013 - 2018 | Akdeniz University, Institute of Science, Matematik, Turkey |
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| Postgraduate 2007 - 2010 | Middle East Technical University, Institute Of Applied Mathematics, Kriptografi, Turkey |
| Undergraduate 2003 - 2007 | Middle East Technical University, Fen Fakültesi, Matematik, Turkey |

Foreign Languages

English, B2 Upper Intermediate

Dissertations

Doctorate, Diferansiyel, Fonksiyonel Diferansiyel ve İntegro-diferansiyel Denklemler ve Sistemleri için Galerkin-tipi bir Sayısal Yöntem, Akdeniz University, Institute of Science, Matematik, 2018

Academic Titles / Tasks

Research Assistant 2013 - Continues

Akdeniz University, Faculty of Science, Matematik

Published journal articles indexed by SCI, SSCI, and AHCI

1. A Galerkin-type approach to solve systems of linear Volterra-Fredholm integro-differential equations

KARAÇAYIR M., YÜZBAŞI Ş.

Turkish Journal of Mathematics, vol.46, no.8, pp.3121-3138, 2022 (SCI-Expanded)

2. An approximation technique for solutions of singularly perturbed one-dimensional convectiondiffusion problem

YÜZBAŞI Ş., KARAÇAYIR M.

International Journal of Numerical Modelling: Electronic Networks,INTERNATIONAL JOURNAL OF NUMERICAL MODELLING-ELECTRONIC NETWORKS DEVICES AND FIELDS, vol.33, no.1, 2020 (SCI-Expanded)

A Galerkin-Type Fractional Approach for Solutions of Bagley-Torvik Equations YÜZBAŞI Ş., KARAÇAYIR M. CMES-COMPUTER MODELING IN ENGINEERING & SCIENCES, vol.123, no.3, pp.941-956, 2020 (SCI-Expanded)

4. A Galerkin-like method for solving linear functional differential equations under initial conditions YÜZBAŞI Ş., KARAÇAYIR M.

TURKISH JOURNAL OF MATHEMATICS, vol.44, no.1, pp.85-97, 2020 (SCI-Expanded)

5. A Galerkin-Type Method for Solving a Delayed Model on HIV Infection of CD4(+) T-cells YÜZBAŞI Ş., KARAÇAYIR M.

IRANIAN JOURNAL OF SCIENCE AND TECHNOLOGY TRANSACTION A-SCIENCE, vol.42, no.A3, pp.1087-1095, 2018 (SCI-Expanded)

6. A Galerkin-Type Method to Solve One-Dimensional Telegraph Equation Using Collocation Points in Initial and Boundary Conditions YÜZBAŞI Ş., KARAÇAYIR M.

INTERNATIONAL JOURNAL OF COMPUTATIONAL METHODS, vol.15, no.5, 2018 (SCI-Expanded)

7. A Numerical Approach for Solving High-Order Linear Delay Volterra Integro-Differential Equations YÜZBAŞI Ş., KARAÇAYIR M.

INTERNATIONAL JOURNAL OF COMPUTATIONAL METHODS, vol.15, no.5, 2018 (SCI-Expanded)

8. A numerical method for solutions of Lotka-Volterra predator-prey model with time-delay YÜZBAŞI Ş., KARAÇAYIR M.

INTERNATIONAL JOURNAL OF BIOMATHEMATICS, vol.11, no.2, 2018 (SCI-Expanded)

9. A Galerkin-Like Approach to Solve Multi-Pantograph Type Delay Differential Equations YÜZBAŞI Ş., KARAÇAYIR M.

FILOMAT, vol.32, no.2, pp.409-422, 2018 (SCI-Expanded)

 A Galerkin-like scheme to solve two-dimensional telegraph equation using collocation points in initial and boundary conditions
 YÜZBAŞI Ş., KARAÇAYIR M.

COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.74, no.12, pp.3242-3249, 2017 (SCI-Expanded)

11. Application of homotopy perturbation method to solve two models of delay differential equation systems

YÜZBAŞI Ş., KARAÇAYIR M. INTERNATIONAL JOURNAL OF BIOMATHEMATICS, vol.10, no.6, 2017 (SCI-Expanded)

- 12. An exponential Galerkin method for solutions of HIV infection model of CD4+ T-cells YÜZBAŞI Ş., KARAÇAYIR M. COMPUTATIONAL BIOLOGY AND CHEMISTRY, vol.67, pp.205-212, 2017 (SCI-Expanded)
- 13. A Galerkin-like approach to solve continuous population models for single and interacting species YÜZBAŞI Ş., KARAÇAYIR M.

KUWAIT JOURNAL OF SCIENCE, vol.44, no.2, pp.9-26, 2017 (SCI-Expanded)

14. A Galerkin-like approach to solve high-order integro-differential equations with weakly singular kernel

YÜZBAŞI Ş., KARAÇAYIR M. KUWAIT JOURNAL OF SCIENCE, vol.43, no.2, pp.106-120, 2016 (SCI-Expanded)

Articles Published in Other Journals

- A Galerkin-like scheme to determine curves of constant breadth in Euclidean 3-space Yüzbaşı Ş., Karaçayır M.
 TWMS Journal of Applied and Engineering Mathematics, vol.11, no.3, pp.646-658, 2021 (ESCI)
- A GALERKIN-LIKE SCHEME TO DETERMINE CURVES OF CONSTANT BREADTH IN EUCLIDEAN 3-SPACE YÜZBAŞI Ş., KARAÇAYIR M. Turkish World Mathematical Society Journal of Applied and Engineering Mathematics, vol.11, no.3, pp.646-658, 2021 (Scopus)
- A GALERKIN-TYPE METHOD FOR SOLUTIONS OF PANTOGRAPH-TYPE VOLTERRA-FREDHOLM INTEGRO-DIFFERENTIAL EQUATIONS WITH FUNCTIONAL UPPER LIMIT YÜZBAŞI Ş., KARAÇAYIR M. SIGMA JOURNAL OF ENGINEERING AND NATURAL SCIENCES-SIGMA MUHENDISLIK VE FEN BILIMLERI DERGISI, vol.38, no.2, pp.995-1005, 2020 (ESCI)
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- A numerical scheme to solve boundary value problems involving singular perturbation YÜZBAŞI Ş., KARAÇAYIR M.
 EUROPEAN JOURNAL OF COMPUTATIONAL MECHANICS, vol.27, no.2, pp.109-122, 2018 (ESCI)
- 5. A Galerkin-like scheme to solve Riccati equations encountered in quantum physics YÜZBAŞI Ş., KARAÇAYIR M.

Journal of Physics: Conference Series, vol.766, 2016 (Scopus)

Refereed Congress / Symposium Publications in Proceedings

1. Numerical Solutions of One-Dimensional Convection-Diffusion Equation by a Galerkin-Like Method Using Polynomial Basis

YÜZBAŞI Ş., KARAÇAYIR M.

International Conference of Mathematics, İstanbul, Turkey, 3 - 06 July 2018, pp.246

2. Numerical Solutions of Lotka-Volterra Equations by a Weighted Residual Scheme Using the Method of Least Squares

YÜZBAŞI Ş., KARAÇAYIR M.

International Conference of Mathematics (ICOM), İstanbul, Turkey, 3 - 06 July 2018, pp.245

3. Numerical solution of initial value problems by a Galerkin-like method using multiple intervals YÜZBAŞI Ş., KARAÇAYIR M.

2nd International Conference on Advances in Science, İstanbul, Turkey, 13 - 15 September 2017, pp.282

4. **Application of Galerkin-like method to Lotka-Voletrra Predator-prey model** YÜZBAŞI Ş., KARAÇAYIR M.

International Conference on Applied Analysis and Mathematical Modelling, İstanbul, Turkey, 03 July 2017, pp.105

5. An operational matrix approach for solutions of multi-pantograph equations YÜZBAŞI Ş., KARAÇAYIR M., Ismailov N.
2nd International Symposium on Multidisciplinary Studies, Roma, Italy, 18 - 21 May 2017, pp.120

6. A Numerical Approach to Obtain Approximate Solutions of Volterra's Population Model with Single Species

YÜZBAŞI Ş., KARAÇAYIR M.

2nd International Symposium on Multidisciplinary Sciences, Roma, Italy, 18 - 21 May 2017, pp.121

7. A Numerical Scheme to Obtain Approximate Solutions of Two-dimensional Telegraph Equation YÜZBAŞI Ş., KARAÇAYIR M.

International Conference on Mathematics and Engineering, İstanbul, Turkey, 10 - 12 May 2017, pp.63

8. Approximate Solutions of Singularly Perturbed Differential Equations by a Numerical Scheme Based on Inner Product

KARAÇAYIR M., YÜZBAŞI Ş.

International Conference on Mathematics and Engineering, İstanbul, Turkey, 10 - 12 May 2017, pp.82

9. Determination of the curves of constant breadth according to Bishop Frame in Euclidean 3-space by a Galerkin-like method KARAÇAYIR M.

14th International Geometry Symposium, Denizli, Turkey, 25 - 28 May 2016, pp.186

- A Galerkin-like scheme to solve Riccati equations encountered in quantum physics YÜZBAŞI Ş., KARAÇAYIR M.
 International Conference on Quantum Science and Applications, Eskişehir, Turkey, 24 - 28 May 2016, pp.107
- 11. A Numerical Method to Obtain Approximate Solutions of a Model on HIV Infection of CD4+ T-cells KARAÇAYIR M., YÜZBAŞI Ş. International Conference On Advancements in Mathematical Sciences, Antalya, Turkey, 5 - 07 November 2015, pp.137
- Lotka-Volterra Nüfus Modelinin Galerkin Tipi Bir Yöntemle Yaklaşık Çözülmesi YÜZBAŞI Ş., KARAÇAYIR M.
 28. Ulusal Matematik Sempozyumu, Antalya, Turkey, 7 - 09 September 2015, pp.202
- Application of the homotopy perturbation method for solving delay HIV infection model of CD4+ Tcells
 - YÜZBAŞI Ş., KARAÇAYIR M.

Karatekin Mathematics Days, Çankırı, Turkey, 11 - 13 June 2014, pp.102

Congress and Symposium Activities

International Conference on Mathematics (ICOM), Attendee, İstanbul, Turkey, 2018 2nd International Conference on Advances in Science, Attendee, Turkey, 2017 International Conference on Applied Analysis and Mathematical Modelling, Attendee, İstanbul, Turkey, 2017 International Conference on Mathematics and Engineering, Attendee, İstanbul, Turkey, 2017 II. International Symposium on Multidisciplinary Studies, Attendee, Roma, Italy, 2017 International Conference on Applied Mathematics and Analysis, Attendee, Ankara, Turkey, 2016 14th International Geometry Symposium, Attendee, Denizli, Turkey, 2016 International Conference on Quantum Science and Applications (ICQSA 2016), Attendee, Eskişehir, Turkey, 2016 International Conference on Advancements in Mathematical Sciences, Attendee, Antalya, Turkey, 2015 Ulusal Matematik Sempozyumu, Attendee, Antalya, Turkey, 2015 Karatekin Mathematics Days 2014, Attendee, Çankırı, Turkey, 2014

Research Areas

Mathematics, Differential Equations, Numerical Analysis, Natural Sciences