

# GAMZE YILDIRIM

## RES. ASST.

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### International Researcher IDs

ScholarID: Gamze

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### Learning Knowledge

Doctorate 2018 - Continues	Akdeniz University, Institute of Science, Matematik Bölümü, Turkey
Postgraduate 2016 - 2018	Akdeniz University, Institute of Science, Matematik Bölümü, Turkey
Undergraduate 2012 - 2016	Akdeniz University, Faculty Of Science, Department of Mathematics, Turkey

### Foreign Languages

English, B2 Upper Intermediate

### Dissertations

Postgraduate, Lineer Diferansiyel Denklemlerinin Çözümleri İçin Laguerre Kollokasyon Yöntemi , Akdeniz University, Institute of Science, Matematik Bölümü, 2018

### Academic Titles / Tasks

Research Assistant 2020 - Continues	Akdeniz University, Institute of Science, Matematik Bölümü
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### Published journal articles indexed by SCI, SSCI, and AHCI

- Numerical solutions of the Bagley-Torvik equation by using generalized functions with fractional powers of Laguerre polynomials**  
Yüzbaşı Ş., Yıldırım G.  
International Journal of Nonlinear Sciences and Numerical Simulation, vol.24, no.3, pp.1003-1021, 2023 (SCI-Expanded)

2. **A numerical approach to solve hyperbolic telegraph equations via Pell–Lucas polynomials**  
YÜZBAŞI Ş., YILDIRIM G.  
Journal of Taibah University for Science, vol.17, no.1, 2023 (SCI-Expanded)
3. **A Pell–Lucas Collocation Approach for an SIR Model on the Spread of the Novel Coronavirus (SARS CoV-2) Pandemic: The Case of Turkey**  
Yüzbaşı Ş., Yıldırım G.  
MATHEMATICS, vol.11, no.3, pp.697-719, 2023 (SCI-Expanded)
4. **Pell-Lucas collocation method for solving a class of second order nonlinear differential equations with variable delays**  
YÜZBAŞI Ş., YILDIRIM G.  
TURKISH JOURNAL OF MATHEMATICS, vol.47, no.1, pp.37-55, 2023 (SCI-Expanded)
5. **A collocation method to solve the parabolic-type partial integro-differential equations via Pell–Lucas polynomials**  
YÜZBAŞI Ş., YILDIRIM G.  
Applied Mathematics and Computation, vol.421, 2022 (SCI-Expanded)
6. **A Pell-Lucas approximation to solve the Abel equation of the second kind**  
YÜZBAŞI Ş., YILDIRIM G.  
Ricerche di Matematica, 2022 (SCI-Expanded)
7. **Legendre Collocation Method to Solve the Riccati Equations with Functional Arguments**  
YÜZBAŞI Ş., YILDIRIM G.  
INTERNATIONAL JOURNAL OF COMPUTATIONAL METHODS, vol.17, no.10, 2020 (SCI-Expanded)
8. **Pell-Lucas collocation method for numerical solutions of two population models and residual correction**  
YÜZBAŞI Ş., YILDIRIM G.  
JOURNAL OF TAIBAH UNIVERSITY FOR SCIENCE, vol.14, no.1, pp.1262-1278, 2020 (SCI-Expanded)
9. **Pell-Lucas collocation method to solve high-order linear Fredholm-Volterra integro-differential equations and residual correction**  
YÜZBAŞI Ş., YILDIRIM G.  
TURKISH JOURNAL OF MATHEMATICS, vol.44, no.4, pp.1065-1091, 2020 (SCI-Expanded)

## Articles Published in Other Journals

1. **Pell-Lucas Collocation Method to Solve Second-Order Nonlinear Lane-Emden Type Pantograph Differential Equations**  
YÜZBAŞI Ş., YILDIRIM G.  
Fundamentals of Contemporary Mathematical Sciences, vol.3, 2022 (Peer-Reviewed Journal)
2. **A Laguerre approach for solving of the systems of linear differential equations and residual improvement**  
YÜZBAŞI Ş., YILDIRIM G.  
COMPUTATIONAL METHODS FOR DIFFERENTIAL EQUATIONS, vol.9, no.2, pp.553-576, 2021 (ESCI)
3. **Laguerre Collocation Method for Solutions of The Systems of First Order Linear Differential Equations**  
YÜZBAŞI Ş., Yıldırım G.  
Turkish Journal of Mathematics and Computer Science, vol.10, pp.222-241, 2018 (Peer-Reviewed Journal)

## Books & Book Chapters

1. **Numerical Solutions of Hantavirus Infection Model by Means of the Bernstein Polynomials**  
Yüzbaşı Ş., Yıldırım G.

## Refereed Congress / Symposium Publications in Proceedings

1. **AN OPERATIONAL METHOD FOR SOLVING THE RICCATI DIFFERENTIAL EQUATION BY USING FERMAT POLYNOMIALS**  
Yüzbaşı Ş., Yıldırım G.  
5. INTERNATIONAL PALANDOKEN SCIENTIFIC STUDIES CONGRESS , Erzurum, Turkey, 18 - 19 March 2023, pp.825-832
2. **A COLLOCATION METHOD BASED ON LERCH POLYNOMIALS TO SOLVE THE PREDATOR-PREY MODEL**  
Yüzbaşı Ş., Yıldırım G.  
5. INTERNATIONAL PALANDOKEN SCIENTIFIC STUDIES CONGRESS, Erzurum, Turkey, 18 - 19 March 2023, pp.814-824
3. **NUMERICAL SOLUTION OF THE ABEL DIFFERENTIAL EQUATION BY USING AN OPERATIONAL MATRIX METHOD BASED ON PELL-LUCAS POLYNOMIALS**  
Yüzbaşı Ş., Yıldırım G.  
4. INTERNATIONAL SCIENTIFIC RESEARCH AND INNOVATION CONGRESS, İstanbul, Turkey, 11 - 12 March 2023, pp.234-242
4. **Approximate Solution Of Logistic Growth Model Via Lerch Collocation Method**  
Yüzbaşı Ş., Yıldırım G.  
4. INTERNATIONAL SCIENTIFIC RESEARCH AND INNOVATION CONGRESS, İstanbul, Turkey, 11 - 12 March 2023, pp.224-233
5. **AN OPERATIONAL MATRIX METHOD FOR APPROXIMATE SOLUTIONS OF A CLASS OF THE SYSTEM OF THE DIFFERENTIAL EQUATIONS WITH DELAY-TERMS**  
Yüzbaşı Ş., Yıldırım G.  
3 rd International Conference on Applied Engineering and Natural Sciences, Konya, Turkey, 20 - 23 July 2022, pp.349-357
6. **APPROXIMATE SOLUTION OF THE DUFFING EQUATION BY USING FIRST BOUBAKER POLYNOMIALS**  
Yüzbaşı Ş., Yıldırım G.  
3 rd International Conference on Applied Engineering and Natural Sciences, Konya, Turkey, 20 - 23 July 2022, pp.369-378
7. **AN OPERATIONAL METHOD BASED ON THE FIRST TYPE SHIFTED CHEBYSHEV POLYNOMIALS FOR SOLVING NONLINEAR LANE-EMDEN TYPE FUNCTIONAL DIFFERENTIAL EQUATIONS**  
Yüzbaşı Ş., Yıldırım G.  
3 rd International Conference on Applied Engineering and Natural Sciences, Konya, Turkey, 20 - 23 July 2022, pp.359-367
8. **FERMAT COLLOCATION APPROACH FOR SOLVING THE PREDATOR-PREY SYSTEM WITH ONE DISCRETE DELAY**  
Yüzbaşı Ş., Yıldırım G.  
3 rd International Conference on Applied Engineering and Natural Sciences, Konya, Turkey, 20 - 23 July 2022, pp.379-389
9. **NUMERICAL SOLUTIONS OF HANTAVIRUS INFECTION MODEL BY MEANS OF THE GENERALIZED BERNSTEIN POLYNOMIALS**  
Yüzbaşı Ş., Yıldırım G.  
International Conference on Artificial Intelligence and Applied Mathematics 2022 (ICAIAME 2022), Baku, Azerbaijan, 20 - 22 May 2022, pp.193
10. **BOUBAKER COLLOCATION METHOD FOR APPROXIMATE SOLUTIONS OF THE MODEL OF POLLUTION FOR A SYSTEM OF LAKES**  
Yıldırım G., Yüzbaşı Ş.

International Conference on Artificial Intelligence and Applied Mathematics 2022 (ICAIAME 2022), Baku, Azerbaijan, 20 - 22 May 2022, pp.192

11. **Applications of Pell-Lucas collocation method for Bratu-type problem with boundary conditions**  
Yüzbaşı Ş., Yıldırım G.  
1st International Conference on Engineering and Applied Natural Sciences, Konya, Turkey, 10 - 13 May 2022, pp.2426-2433
12. **An operational method based on the first type shifted Chebyshev polynomials for linear delay differential equations with variable coefficients**  
Yüzbaşı Ş., Yıldırım G.  
1st International Conference on Engineering and Applied Natural Sciences, Konya, Turkey, 10 - 13 May 2022, pp.2434-2438
13. **An operational matrix method for approximate solutions of mass-spring system with two freedom degree**  
Yüzbaşı Ş., Yıldırım G.  
1st International Conference on Engineering and Applied Natural Sciences, Konya, Turkey, 10 - 13 May 2022, pp.2439-2443
14. **A NUMERICAL APPROACH TO LANE-EMDEN TYPE FUNCTIONAL DIFFERENTIAL EQUATIONS WITH THE HELP OF AN OPERATIONAL MATRIX METHOD**  
Yıldırım G., Yüzbaşı Ş.  
13th International Conference of Strategic Research on Scientific Studies and Education (ICoSReSSE), Antalya, Turkey, 26 - 29 May 2021, pp.347-357
15. **PELL-LUCAS COLLOCATION METHOD FOR THE APPROXIMATE SOLUTIONS OF THE SINGULAR TWO-POINT BOUNDARY VALUE PROBLEMS (BVPs)**  
Yüzbaşı Ş., Yıldırım G.  
13th International Conference of Strategic Research on Scientific Studies and Education (ICoSReSSE), Antalya, Turkey, 26 - 29 May 2021, pp.358-368
16. **APPROXIMATE SOLUTIONS OF THE LANE-EMDEN TYPE DIFFERENTIAL-DIFFERENCE EQUATIONS BY USING FERMAT POLYNOMIALS**  
Yüzbaşı Ş., Yıldırım G.  
2. INTERNATIONAL CONGRESS ON MATHEMATICS AND GEOMETRY, Ankara, Turkey, 20 May 2021, pp.74-85
17. **APPROXIMATE SOLUTIONS OF SINGULAR PERTURBATED DELAY DIFFERENTIAL EQUATIONS WITH THE HELP OF THE LEGENDRE COLLOCATION METHOD**  
Yüzbaşı Ş., Yıldırım G.  
2. INTERNATIONAL CONGRESS ON MATHEMATICS AND GEOMETRY, Ankara, Turkey, 20 May 2021, pp.24-36
18. **THE APPROXIMATE SOLUTIONS OF THE FREEDOM VIBRATION EQUATIONS OF THE MASS-SPRING SYSTEM WITH TWO FREEDOM DEGREE: PELL-LUCAS MATRIX METHOD**  
Yıldırım G., Yüzbaşı Ş.  
2. INTERNATIONAL CONGRESS ON MATHEMATICS AND GEOMETRY, Ankara, Turkey, 20 May 2021, pp.59-73
19. **AN OPERATIONAL MATRIX METHOD FOR THE APPROXIMATE SOLUTIONS OF THE VISCOUSLY DAMPED SINGLE DEGREE OF FREEDOM SYSTEM SUBJECTED TO HARMONIC EXCITATION**  
Yüzbaşı Ş., Yıldırım G.  
2. INTERNATIONAL CONGRESS ON MATHEMATICS AND GEOMETRY, Ankara, Turkey, 20 May 2021, pp.48-58
20. **APPROXIMATE SOLUTIONS OF THE NONLINEAR LANE-EMDEN DIFFERENTIAL EQUATIONS USING AN OPERATIONAL MATRIX METHOD**  
Yıldırım G., Yüzbaşı Ş.  
2. INTERNATIONAL CONGRESS ON MATHEMATICS AND GEOMETRY, Ankara, Turkey, 20 May 2021, pp.37-47
21. **A COLLOCATION METHOD FOR THE APPROXIMATE SOLUTION OF LINEAR NEUTRAL DELAYED DIFFERENTIAL EQUATIONS WITH VARIABLE COEFFICIENT**  
Yıldırım G., Yüzbaşı Ş.  
AL-FARABI INTERNATIONAL CONGRESS ON APPLIED SCIENCES-II, Nakhchivan, Azerbaijan, 2 - 04 May 2021, pp.150-159

22. **AN OPERATIONAL MATRIX METHOD FOR NUMERICAL SOLUTIONS OF SINGULARLY PERTURBATED DIFFERENTIAL EQUATIONS**  
Yüzbaşı Ş., Yildirim G.  
AL-FARABI INTERNATIONAL CONGRESS ON APPLIED SCIENCES - II, Nakhchivan, Azerbaijan, 2 - 04 May 2021, pp.139-149
23. **APPROXIMATE SOLUTIONS OF SINGULAR PERTURBATED DELAY DIFFERENTIAL EQUATIONS WITH THE HELP OF THE BERNSTEIN COLLOCATION METHOD**  
Yüzbaşı Ş., Yildirim G.  
AL-FARABI INTERNATIONAL CONGRESS ON APPLIED SCIENCES-II, Nakhchivan, Azerbaijan, 2 - 04 May 2021, pp.160-169
24. **NUMERICAL SOLUTIONS OF THE LINEAR LANE-EMDEN DIFFERENTIAL EQUATIONS BY USING THE MORGAN-VOYCE FUNCTIONS AND RESIDUAL CORRECTIONS**  
YILDIRIM G., YÜZBAŞI Ş.  
1.INTERNATIONAL CONGRESSON MATHEMATICS AND GEOMETRY, Ankara, Turkey, 09 December 2020, pp.17-31
25. **AN OPERATIONAL MATRIX METHOD FOR THE SYSTEMS OF HIGHER-ORDER LINEAR FREDHOLM INTEGRO-DIFFERENTIAL EQUATIONS BY USING THE PELLUCAS FUNCTIONS**  
YÜZBAŞI Ş., YILDIRIM G.  
1.INTERNATIONAL CONGRESSON MATHEMATICS AND GEOMETRY, Ankara, Turkey, 09 December 2020, pp.32-46
26. **An operational matrix method based on Chebyshev polynomials for approximate solutions of systems of higher order linear Fredholm integro-differential equations**  
YÜZBAŞI Ş., YILDIRIM G.  
TURK-COSE 2020, Nur-Sultan, Kazakhstan, 14 - 15 November 2020, pp.54-67
27. **Pell-Lucas collocation method and residual error estimation for the Lane–Emden differential equations**  
YÜZBAŞI Ş., YILDIRIM G.  
TURK-COSE 2020, Nur-Sultan, Kazakhstan, 14 - 15 November 2020, pp.137-149
28. **BESSEL COLLOCATION METHOD FOR SOLVING FIRST ORDER DIFFERENTIAL EQUATIONS WITH VARIABLE DELAYS**  
YÜZBAŞI Ş., Yildirim G.  
5 th International Congress on Multidisciplinary Studies, Antalya, Turkey, 2 - 03 November 2018, vol.1, pp.110-129
29. **Laguerre Polynomial Solutions Of Systems Of Multi-Pantograph Equations**  
YÜZBAŞI Ş., Yildirim G.  
Türk Akademik Araştırmalar Dergisi Uluslararası Multidisipliner Kongresi (TARRC), Antalya, Turkey, 12 - 14 October 2018, pp.163-164
30. **Laguerre Collocation Method for Solutions of Systems of Linear Differential equations**  
YÜZBAŞI Ş., YILDIRIM G.  
International Conference on Mathematics and Mathematics Education (ICMME-2018), Ordu, Turkey, 27 - 29 June 2018, pp.311-312
31. **Bessel collocation method to determinate the curves of constant breadth according to Bishop Frame in Euclidean 3-space**  
YÜZBAŞI Ş., Yildirim G.  
15th International Geometry Symposium, Amasya, Turkey, 03 July 2017, pp.86

## Metrics

Publication: 55

Citation (WoS): 39

Citation (Scopus): 22

H-Index (WoS): 4

H-Index (Scopus): 3

## Congress and Symposium Activities

The 6th Mediterranean International Conference of Pure & Applied Mathematics and Related Areas (MICOPAM 2023), Attendee, Paris, France, 2023

5. INTERNATIONAL PALANDOKEN SCIENTIFIC STUDIES CONGRESS, Attendee, Erzurum, Turkey, 2023

4. INTERNATIONAL MARMARA SCIENTIFIC RESEARCH AND INNOVATION CONGRESS, Attendee, İstanbul, Turkey, 2023

3 rd International Conference on Applied Engineering and Natural Sciences, Attendee, Konya, Turkey, 2022

1st International Conference on Engineering and Applied Natural Sciences, Attendee, Konya, Turkey, 2022

13th International Conference of Strategic Research on Scientific Studies and Education (ICoSReSSE), Attendee, Antalya, Turkey, 2021

2.INTERNATIONAL CONGRESS ON MATHEMATICS AND GEOMETRY, Attendee, Ankara, Turkey, 2021

AL-FARABI INTERNATIONAL CONGRESS ON APPLIED SCIENCES - II, Attendee, Nakhchivan, Azerbaijan, 2021

1.INTERNATIONAL CONGRESSON MATHEMATICS AND GEOMETRY, Attendee, Ankara, Turkey, 2020

TURK-COSE 2020, Attendee, Astana, Kazakhstan, 2020

5 th International Congress on Multidisciplinary Studies, Attendee, Antalya, Turkey, 2018

Türk Akademik Araştırmalar Dergisi Uluslararası Multidisipliner Kongresi (TARRC), Attendee, Antalya, Turkey, 2018

International Conference on Mathematics and Mathematics Education (ICMME-2018), Attendee, Ordu, Turkey, 2018

15th International Geometry Symposium, Attendee, Amasya, Turkey, 2017

## Research Areas

Mathematics, Differential Equations, Integral Equations, Special Functions, Numerical Analysis, Natural Sciences