Curriculum Vitae

1. Name, Surname	***Assoc. Prof. Dr. SUZAN CIVAL BURANAY***	
2. Education and scientific degrees	**M.S., Ph.D., Assist. Prof. Dr., Assoc. Prof. Dr.**	
Institution	**Professional qualification, qualification degree, academic degree**	**Year**
Department of Mathematics, Faculty of Arts and Sciences Eastern-Mediterranean University, Famagusta, T.R.N.C.	**Ph.D** Mathematics **(**Numerical Analysis)	2007
Department of Mathematics, Faculty of Arts and Sciences Eastern-Mediterranean University, Famagusta, T.R.N.C.	**M.S.** Applied Mathematics and Computer science	1995
Department of Mathematics, Faculty of Arts and Sciences Eastern-Mediterranean University, Famagusta, T.R.N.C.	**B.S.** Applied Mathematics and Computer science	1993
3. Place of work		
Institution	**Type of sector and occupation**	**Dates**
Department of mathematics, Faculty of Arts and Sciences Eastern-Mediterranean University, Famagusta, T.R.N.C.	Associate Professor Faculty Member	June 2017-Present
Department of mathematics, Faculty of Arts and Sciences Eastern-Mediterranean University, Famagusta, T.R.N.C.	Assistant Professor Faculty Member	Sep. 2013 – June 2017
Department of mathematics, Faculty of Arts and Sciences Eastern-Mediterranean University, Famagusta, T.R.N.C.	Part time instructor (Dr.)	2008 - 2013

Department of mathematics, Faculty of Arts and Sciences Eastern-Mediterranean University, Famagusta, T.R.N.C.	Ph. D Research Assistant	1995-2000
Department of mathematics, Faculty of Arts and Sciences Eastern-Mediterranean University, Famagusta, T.R.N.C.	MS Research Assistant	1993-1994

4. Lectured Courses

4.1. Coordinated Multi Group Courses	Mathematics for Business and Economics – I Calculus – I	
4.2 Graduate Courses	Math 569: Numerical linear Algebra Math 571: Selected Topics in Numerical Analysis Math 669: Advanced Numerical Linear Algebra Math 578: Theory of Finite Difference Schemes Math 611: Collocation Methods for Volterra integral and Related Functional Equations	
4.3. Undergraduate Courses		
Elementary Mathematics		
Introductory Mathematics		
Linear Algebra		
Discrete Mathematics		
Ordinary Differential Equations		
Mathematics for Business and Economics – I		
Linear Algebra		
Numerical Analysis for Engineers		
Calculus – I		
Differential Equations		
Introduction to Teaching Profession		
Development and Learning		
Basic Mathematics		
Basic Mathematics – I		
Introduction to Computers		
Basic Mathematics – II		
Calculus –I		
Calculus – II		
Introductory Mathematics		
Computer – I		
Mathematics for Electronic Technician		
Mathematics for Arts and Social Sciences		
Computers for Law		
Analytic Geometry – I		
General Mathematics		
Analysis – III		
Analytic Geometry – II		

Geometry
Mathematics for Business and Economics – II
Ordinary Differential Equations and Linear Algebra
Numerical Analysis for Engineers
Mathematical Methods for Engineers

5. Ph. D Theses Supervised

1. Lawrence Adedayo Farinola, Grid Approximation of Derivatives of the Solution of Heat Conduction Equation, started on 2015-2016 Fall, Dissertation date: 27 June 2019.

2. Nouman Arshad, Hexagonal Grid Approximation of the Solution of Two Dimensional Heat Equation, Started on 2018-2019 Fall. Dissertation date: :24 August 2020.

3. Sara Safarzadeh Falahhesar, Numerical solution of Voltera integral equations using some linear positive operators, Started on 2016-2017 Spring, Dissertation date:: 4 February 2022

4. Ahmed Hersi Mohamed Matan, Highly Accurate Implicit Schemes Using Hexagonal Grids for the Approximation of the Derivatives of the Solution of Two Dimensional Heat Equation, started on 2019-2020 Fall, Dissertation date:: 4 February 2022.

5.1 Master's Theses Supervised

1. Soran Jalal Abdalla., "Approximate methods of inverse preconditioners for solving the linear algebraic equations", started on September 2013, completed on 2014.
2. Damilola V. Adekanmbi, "On A Comparative Study of Direct Solution Methods of The Discrete Poisson Equation on a Rectangle", started on March, 2015,completed on June, 2016.
3. Bewar Sulaiman, "Accelerated Overrelaxation Method for the Solution of Discrete Laplace's Equation on a Rectangle", started on October 2015, completed on July, 2016.

5.2 Master's Theses In Progress

5.3 Ph.D. Theses in Progress

1. James Chin Mathew, A shifted Jacobi Collocation Method for Solving Nonlinear Fractional Langevin Equations, Supervisor: Prof. Dr. Nazım Mahmudov, Co-supervisor: Assoc. Prof. Dr. Suzan Cival Buranay

6. Memberships

- Faculty Board member, 2018-2019 Spring to present (2022-2023 Fall).
- Mathematics Department Seminar Committee member 2013-2014 academic semester to 2021-2022 Fall semester
- Mathematics Department Social Activities Committee member from 2014-2015 to 2015-2016.
- From 2021-2022 Spring to present (2022-2023 Fall)
- Mathematics Department Graduate Studies Committee member fall 2016-2017 to present (2022-2023 Fall)

- Mathematics Department Accreditation Committee member 2021-2022 Spring to present (2022-2023 Fall)

7. Honors and Awards

8. Publications

8.1 INTERNATIONAL ARTICLES (SCI, SCI Expanded, International Journals)

1. Buranay S.C., Özarslan M.A., Falahhesar S.S. (2022): Hybrid Operators for Approximating Nonsmooth Functions and Applications on Volterra Integral Equations with Weakly Singular Kernels, *Numerical Functional Analysis and Optimization*, 1--28, DOI: 10.1080/01630563.2022.2150642

2. Buranay, S.C.; Arshad N., Matan, A.H., Hexagonal Grid Computation of the Derivatives of the Solution to the Heat Equation by Using Fourth-Order Accurate Two-Stage Implicit Methods. *Fractal and Fractional* (2021), 5, 203, 1--34. https://doi.org/ 10.3390/fractalfract5040203

3. Buranay, S.C; Özarslan, M.A; Falahhesar S.S., Numerical Solution of the Fredholm and Volterra Integral Equations by Using Modified Bernstein–Kantorovich Operators, *Mathematics,* (2021), 9, 1193. https://doi.org/10.3390/math9111193.

4. Buranay, S.C.; Iyikal, O.C., Incomplete block-matrix factorization of M-matrices using two step iterative method for matrix inversion and preconditioning, *Mathematical Methods in Applied Sciences*, (2021), 44 (9), 7634--7650, https://doi.org/10.1002/mma.6502.

5. Buranay, S.C.; Matan, A.H.; Arshad N., Two stage implicit method on hexagonal grids for approximating the first derivatives of the solution to the heat equation, *Fractal and Fractional* (2021), 5(19), 1--26.

6. Buranay, S.C.; Arshad, N., Hexagonal grid approximation of the solution of heat equation on special polygons, *Advances in Difference Equations*, (2020), 2020:309, 1--24.

7. Buranay S.C ; Iyikal O.C, A predictor-corrector iterative method for solving linear least squares problems and perturbation error analysis, *Journal of Inequalities and Applications* (2019) 2019:203, 1--14. https://doi.org/10.1186/s13660-019-2154-z.,

8. Buranay S.C ; Iyikal O.C, Approximate Schur-Block ILU Preconditioners for Regularized Solution of Discrete Ill-Posed Problems, *Mathematical Problems in Engineering* (2019) Volume 2019, Article ID 1912535, 18 pages https://doi.org/10.1155/2019/1912535

9. Buranay S.C., Farinola L.A., Implicit methods for the first derivative of the solution to heat equation, *Advances in Difference Equations*, https://doi.org/10.1186/s13662-018-1887-1, (2018) 2018:430, 1--28.

10. Buranay S.C., Subasi D., Iyikal O.C., On the two classes of high-order convergent methods of approximate inverse preconditioners for solving linear systems, *Numerical Linear Algebra with Applications*, Vol 24, 6, (2017), pp.1--28

11. Dosiyev A.A., Buranay Cival S. :*One-block method for computing the generalized stress intensity factors for Laplace`s equation on a square with a slit and on L-shaped domain*, Journal of Computational and Applied Mathematics, Vol. **289** (2015), **pp.** 400--411.

12. Buranay S.C.: *Analysis of the block-grid method for the solution of Laplace's equation on polygons with a slit*, Special Issue "Well-Posed and Ill-Posed Boundary Value Problems for PDE 2013" in *Abstract and Applied Analysis* Volume 2013, Article ID : 948564, 8 pages, http://dx.doi.org/10.1155/2013/948564.

13. Volkov E. A., Dosiyev A.A., and Buranay S.C.: *On the solution of a nonlocal problem*, *Computers and Mathematics with Applications*, Vol. 66 (2013), **pp**. 330--338. http://dx.doi.org/10.1016/j.camwa.2013.05.010

14. Dosiyev A.A., Buranay Cival S.: *A fourth order block-grid method for solving Laplace's equation on a staircase polygon with boundary functions in* $C^{k,\lambda}$ **,** Special Issue "Well-Posed and Ill-Posed Boundary Value Problems for PDE 2013" in *Abstract and Applied Analysis*, Volume 2013, Article ID : 864865, 11 pages, http://dx.doi.org/10.1155/2013/864865

15. Dosiyev A.A., Buranay Cival, S., Subasi D.: *The highly accurate block-grid method in solving Laplace's equation for nonanalytic boundary condition with corner singularity*, *Computers and Mathematics with Applications*, Vol. **64**, pp. 616--632, (AUG 2012) DOI : 10.1016/j.camwa.2011.12.068

16. Dosiyev A.A., Mazhar Zeka, Buranay Cival, S. : *Block method for problems on L-shaped domains*, *Journal of Computational and Applied Mathematics*, Vol. **235** (DEC 2010) **pp**. 805--816, DOI : 10.1016 /j.cam.2010.07.007.

17. Dosiyev A.A., Buranay Cival S., Subasi D. : The block-grid method for solving Laplace's equation on polygons with nonanalytic boundary conditions, *Boundary Value Problems* (2010), 22 pages, DOI : 10.1155 /2010/468594.

18. Dosiyev, A.A., Buranay Cival, S .:*On the order of maximum error of the finite difference solutions of Laplace's equation on rectangles*. *ANZIAM J*. **50** (JUL 2008), **Issue**:1, **pp**. 59--73, DOI: 10.1017/S1446181108000151.

19. Dosiyev, A.A., Buranay Cival, S. : *On solving the cracked beam problem by a block method, Communications in Numerical Methods in Engineering,* (NOV 2008) ; **24** : **pp.** 1277--1289.

20. Dosiyev, A.A., Buranay Cival, S. : *A combined method for solving Laplace's boundary value problem with singularities*, Inter. Journal of Pure and Appl. Math., **21**, No. 3, (2005), **pp**.353--367.

8.2 ONGOING RESEARCH ARTICLES

1. Buranay, S.C.; Arshad N., Solution of Heat Equation by a Novel Implicit Scheme Using Block Hybrid Preconditioning of the Conjugate Gradient Method.

2. Buranay, S.C.; Bivariate Modified Bernstein-Kantorovich Operators for the Numerical Solution of Two-dimensional Fractional Volterra Integral Equations.

8.3 INTERNATIONAL BOOKS

1. Dosiyev, A.A., Buranay Cival, S.: A fourth order accurate difference-analytical method for solving Laplace's boundary value problem with singularities, In "Mathematical Methods in Engineering", Ed. K.Tas, J.A.T. Machado, D. Baleanu, Springer, (2007), **pp**.167-176.

2. Buranay S.C, Farinola L.A , Six Point Implicit Methods for the Approximation of the Derivatives of the Solution of First Type Boundary Value Problem for Heat Equation, In "Functional Analysis in Interdisciplinary Applications-II", Ed. Allaberen Ashyralyev Tynysbek Sh. Kalmenov, Michael V. Ruzhansky, Makhmud A. Sadybekov, Durvudkhan Suragan, Springer Proceedings in Mathematics & Statistics Volume 351, Springer Nature Switzerland AG 2021, pp. 39-62.

8.4 INTERNATIONAL CONFERENCE PROCEEDINGS

1. Buranay S.C.; Arshad N., Implicit method of high accuracy on hexagonal grids for approximating the solution to heat equation on rectangle, AIP Conference Proceedings, 2021, 08003-1-08003-4.

2. Buranay S.C.; Farinola L.A., Six Point Implicit Methods for the Pure Second Derivatives of the Solution of First type Boundary Value Problem for One Dimensional Heat Equation, International Conference on Analysis and Applied Mathematics (ICAAM 2018), AIP Conf. Proc. 1997, 020077-1--020077-6; https://doi.org/10.1063/1.5049071.

3. Buranay S.C. Farinola L.A., Four Point Implicit Methods for the Second Derivatives of the Solution of First Type Boundary Value Problem for One Dimensional Heat Equation, Proceedings of the 3rd International Conference on Computational and Engineering Sciences CMES2018, ITM Web of Conferences, **22,** 01011 (2018) CMES-2018, https://doi.org/10.1051/itmconf/20182201011.

4. Buranay S.C. Iyikal., O.C., High Order Iterative Methods for Matrix Inversion and Regularized Solution of Fredholm Integral Equation of First Kind with Noisy Data, ITM Web of Conferences **22**, 01002 (2018), CMES-2018, https://doi.org/10.1051/itmconf/20182201002

5. Dosiyev, A.A., Buranay Cival, S., On solving the cracked beam problem by a block method. 5th GRACM International Congress on Computational Mechanics Limasol, Cyprus, Proceedings, **2**, (2005), **pp**. 887-893.

6. Dosiyev, A.A., Cival, S.: A difference-analytical method for solving Laplace's boundary value problems with singularities, In "2004-Dynamical Systems and Applications", Ed. H. Akca, A. Boucherif, and V. Covachev, GBS Publishers & Distributors, India, (2004), pp.339-360.

8.5 INTERNATIONAL CONFERENCE ABSTRACTS

1. Buranay, S.C. , Bivariate Modified Bernstein-Kantorovich Operators for the Numerical Solution of Two-Dimensional Fractional Volterra Integral Equation, NTERNATIONAL CONFERENCE on Mathematical Analysis and Applications in Science and Engineering ICMASC'22, Book of Extended abstracts, 2022, 241--244.

2. Buranay S.C., Özarslan M.A, Falahhesar S.S, Hybrid Operators for Solving the Weakly Singular Volterra Integral Equations: Theoretical Analysis, he 3rd & 4th Mediterranean International Conference of Pure & Applied Mathematics and Related Areas (MICOPAM 2020-2021) https://micopam.com Conference Venue: Faculty of Science (Block B), Akdeniz University, Antalya, TURKEY Antalya, TURKEY November 11th -12th, 2021, 89.

3. Buranay S.C., Özarslan M.A, Falahhesar S.S, Hybrid Operators for Solving the Weakly Singular Volterra Integral Equations: Numerical Analysis, he 3rd & 4th Mediterranean International Conference of Pure & Applied Mathematics and Related Areas (MICOPAM 2020-2021) https://micopam.com Conference Venue: Faculty of Science (Block B), Akdeniz University, Antalya, TURKEY Antalya, TURKEY November 11th -12th, 2021, 91.

4. Buranay S.C., Hersi A.M., Nouman A., Highly Accurate Implicit Schemes for the Numerical Computation of Derivatives of the Solution to Heat Equation, The 3rd & 4th Mediterranean International Conference of Pure & Applied Mathematics and Related Areas (MICOPAM 2020-2021) https://micopam.com Conference Venue: Faculty of Science (Block B), Akdeniz University, Antalya, TURKEY Antalya, TURKEY November 11th -12th, 2021, 82.

5. Buranay S.C., Arshad N., Implicit Method of High Accuracy on Hexagonal Grids for Approximating the Solution to Heat Equation on a Domain with Smooth Boundary, 4th Interntional Conference of Mathematical Sciences ICMS 2020 17-21 June 2020 Istanbul, Turkey, 118.

6. Buranay S.C., Hersi A.M., Nouman A., Implicit method of second order accuracy on hexagonal grids for approximating the first derivatives of the solution to heat equation on a rectangle, Fifth International Conference on Analysis and Applied Mathematics, Abstract book of ICAAM 2020,77.

7. Buranay S.C., Arshad N., Implicit Method of High Accuracy on Hexagonal Grids for Approximating the Solution to Heat Equation on Rectangle, 4th International Conference of Mathematical Sciences ICMS 2020 17-21 June 2020 Istanbul, Turkey, 117.

8. Dosiyev, A.A., Buranay Cival, S. Effective Error Estimate for the Hexagonal Grid Solution of Laplace's Equation on a Rectangle, page 98, Book of Abstracts, 8th INTERNATIONAL EURASIAN CONFERENCE ON MATHEMATICAL SCIENCES AND APPLICATIONS, Dedicated to the 100th Anniversary of Baku State University, 27-30 August 2019 Baku, Azerbaican, 98.

9. Buranay S.C, Iyikal O.C Incomplete Block-Matrix Factorization of M-Matrices Using Two Step Iterative Method for Matrix Inversion and Preconditioning, page 178 , 8th INTERNATIONAL EURASIAN CONFERENCE ON MATHEMATICAL SCIENCES AND APPLICATIONS, Dedicated to the 100th Anniversary of Baku State University, 27-30 August 2019 Baku, Azerbaican, 178.

10. Buranay S.C. Farinola L.A., Four Point Implicit Methods for the Second Derivatives of the Solution of First Type Boundary Value Problem for One Dimensional Heat Equation, 3rd International Conference on Computational and Engineering Sciences Abstract Book page 211, CMES2018, 4-6 May 2018 Girne, Cyprus, 020077-1--020077-6

11. Buranay S.C., On the truncation error in the solution of Dirichlet problem for Laplace's equation in plane by finite differences using hexagonal grid, Abtract Booklet of MICOPAM 2018, (2018) page 8.

12. Buranay S.C. Iyikal, O.C., High Order Iterative Methods for Matrix Inversion and Regularized Solution of Fredholm Integral Equation of First Kind with Noisy Data, 3rd International Conference on Computational and Engineering Sciences, Abstract Book page 286, CMES2018, 4-6 May 2018 Girne, Cyprus.

13. Buranay S.C, Farinola L.A., Six Point Implicit Methods for the Pure Second Derivatives of the Solution of First type Boundary Value Problem for One Dimensional Heat Equation, Fourth International Conference on Analysis and Applied Mathematics (ICAAM 2018), Abstract Book, Page 44, Cyprus.

14. Dosiyev A.A., Buranay Cival S. :*One-block method for computing the generalized stress ointensity factors for Laplace`s equation on a square with a slit and on L-shaped domain*, Book of Abstracts for ACOMEN 2014, 23-28 June 2014, Gent, Belgium, pp. 93-94.

15. Dosiyev, A.A., Buranay Cival, S. : A high accurate difference-analytical method for solving Laplace's equation on polygons with nonanalytic boundary conditions, Abstract of 14th International Congress on Computational and Applied Mathematics (ICCAM2009), Antalya Turkey, 29 September-02 October 2009.

16. Dosiyev, A.A., Mazhar Z., Buranay Cival, S.: Block Method for problems on L-Shaped domains, International Conference on Mathematical Analysis, Differential Equations and their Applications, Book of Abstracts, Famagusta, North Cyprus, September 12-15, 2008.

17. Dosiyev, A.A., Buranay Cival, S. : On solving the cracked beam problem by a block method. Abstract of 5th GRACM International Congress on Computational Mechanics Limasol, Cyprus, 29 June-1 July 2005.

18. Cival S., Dosiyev, A.A.,: An effective realization of the high accurate Block-Grid method in solving Laplace's equation on polygons. Book of Abstracts of "International Conference on Mathematical Modelling and Scientific Computing", page 9, April 2-6 2001.

19. Dosiyev, A.A., Cival S., : Domain Decomposition Method for a Nonsmooth Solutions of the Laplace Equation, Tenth International Conference on Domain Decomposition Methods, Conference Program and Book of Abstracts, Boulder, Colorado, USA. August 10-14, 1997, 84.

9. Others

- As faculty representative worked with MIKA for the editing graduation year book for 2013-2014 Fall Semester.
- As faculty representative worked with MIKA for the 3rd International Carrier Week took place on 11-15 May 2015.
- As faculty representative worked with MIKA for the 4th International Carrier Week took place on 28 April-1 May 2016.
- As faculty representative worked with MIKA for the 5th International Carrier Week took place on 27 February-3 March 2017.

- Faculty Coordinator and worked with MIKA for the 6th international Carrier Week for the academic year 2017-2018.
- Faculty Coordinator worked with MIKA for the 7th International Carrier Week for the academic year 2018-2019.
- Faculty Coordinator worked with MIKA for the 10th International Carrier days for the academic year 2021-2022.
- Faculty MIKA Coordinator for the 11th International Carrier days for the academic year 2022-2023.

10. Research Projects

T.C. / KKTC BİLİMSEL ARAŞTIRMA PROJELERİ (BAP-1)
ÜNİVERSİTELERE AİT ARAŞTIRMA PROJESİ (B TÜRÜ ARAŞTIRMA PROJESİ) (2.1.1.02)
Project Start : 1 January 2010
Finish : 1 January 2011
Project Title : Analitik Olmayan Sınır Koşullu Laplace Denkleminin Tekilliği Bulunan Çözümleri için Blok-Izgara (Block-Grid) Yöntemi
Director of the project : Prof. Dr. A. A. Dosiyev

11. Reviewer in Journals

1. Applied Mathematics and Computation **(AMC)**
2. IEEE
3. Iranian Journal of Mathematics
4. Applied and Computational Mathematics
5. Journal of Applied Mathematics and Computing
6. Journal of Mathematics
7. Journal of Computational and Applied Mathematics (**JCAM**)
8. Mathematical Methods in the Applied Sciences (**MMAS**)
9. Computational and Applied Mathematics (**COAM**)
10. AIP
11. Electronic Research Archive (**AIMS**)
12. Bulletin of Karaganda University Mathematics