# Prof. BÜLENT SAKA

## Personal Information

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## Education Information

Doctorate, Eskisehir Osmangazi University, Fen Bilimleri Enstitüsü, Matematik (Dr), Turkey 1998 - 2002
Postgraduate, Eskisehir Osmangazi University, Fen Bilimleri Enstitüsü, Matematik (Yl) (Tezli), Turkey 1995 - 1998
Undergraduate, Eskisehir Osmangazi University, Fen-Edebiyat Fakültesi, Matematik Bölümü, Turkey 1991 - 1995

## Dissertations

Doctorate, RLW ve K-S denklemlerinin B-spline kolokeyşin metodları ile çözümleri, Eskisehir Osmangazi University, Fen Bilimleri Enstitüsü, Matematik (Dr), 2002
Postgraduate, Parabolik denklemlerin nümerik çözümleri, Eskisehir Osmangazi University, Fen Bilimleri Enstitüsü, Matematik (Yl) (Tezli), 1998

## Research Areas

Differential Equations, Functional Equations, Fourier Analysis, General Mathematics, Integral Equations, Integral Transformations, Computational Calculation, Partial Differential Equations, Special Functions, Numerical Analysis

## Academic Titles / Tasks

Professor, Eskisehir Osmangazi University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 2015 - Continues
Associate Professor, Eskisehir Osmangazi University, Fen-Edebiyat Fakültesi, Matematik Ve Bilgisayar Bilimleri Bölümü, 2010 - 2015
Assistant Professor, Eskisehir Osmangazi University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 2003 - 2010
Research Assistant, Eskisehir Osmangazi University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 1995 - 2003

## Academic and Administrative Experience

Dean, Eskisehir Osmangazi University, Fen Fakültesi, Matematik-Bilgisayar Bölümü, 2022 - Continues
Eskisehir Osmangazi University, Fen-Edebiyat Fakültesi, 2010 - 2013
Eskisehir Osmangazi University, Fen-Edebiyat Fakültesi, Matematik Ve Bilgisayar Bilimleri Bölümü, 2004 - 2010

## Published journal articles indexed by SCI, SSCI, and AHCI

## Published journal articles indexed by SCI, SSCI, and AHCI

I. **High Order Predictor–Corrector Cubic B-Spline Collocation Method for Modeling Solitary Waves**
SAKA B., ERSOY HEPSON Ö., DAĞ İ.
Proceedings of the National Academy of Sciences India Section A - Physical Sciences, vol.94, no.1, pp.83-98, 2024 (SCI-Expanded)

II. **Integration of the RLW equation using higher-order predictor–corrector scheme and quintic B-spline collocation method**
SAKA B., DAĞ İ., ERSOY HEPSON Ö.
Mathematical Sciences, vol.17, no.4, pp.491-502, 2023 (SCI-Expanded)

III. **A higher-order efficient approach to numerical simulations of the RLW equation**
DAĞ İ., ERSOY HEPSON Ö., SAKA B.
Pramana - Journal of Physics, vol.96, no.1, 2022 (SCI-Expanded)

IV. **The cubic B-spline least-squares finite-element method for the numerical solutions of regularized long-wave equation**
Hepson Ö., Dağ İ., Saka B., Ay B.
International Journal of Computer Mathematics, vol.99, no.5, pp.993-1004, 2022 (SCI-Expanded)

V. **Solitary waves of the RLW equation via least squares method**
Ersoy Hepson Ö., Dağ İ., Saka B., Ay B.
International Journal Of Nonlinear Sciences And Numerical Simulation, vol.0, 2021 (SCI-Expanded)

VI. **A QUARTIC B-SPLINE COLLOCATION METHOD FOR SOLVING THE NONLINEAR SCHRODINGER EQUATION**
Saka B.
APPLIED AND COMPUTATIONAL MATHEMATICS, vol.14, no.1, pp.75-86, 2015 (SCI-Expanded)

VII. **A quintic B-spline finite-element method for solving the nonlinear Schrodinger equation**
Saka B.
PHYSICS OF WAVE PHENOMENA, vol.20, no.2, pp.107-117, 2012 (SCI-Expanded)

VIII. **B-Spline Collocation Algorithms for Numerical Solution of the RLW Equation**
SAKA B., Sahin A., Dag İ.
NUMERICAL METHODS FOR PARTIAL DIFFERENTIAL EQUATIONS, vol.27, no.3, pp.581-607, 2011 (SCI-Expanded)

IX. **Cosine Expansion-Based Differential Quadrature Algorithm for Numerical Solution of the RLW Equation**
Dag İ., Korkmaz A., SAKA B.
NUMERICAL METHODS FOR PARTIAL DIFFERENTIAL EQUATIONS, vol.26, no.3, pp.544-560, 2010 (SCI-Expanded)

X. **Quartic B-spline Galerkin approach to the numerical solution of the KdVB equation**
Saka B., DaG İ.
APPLIED MATHEMATICS AND COMPUTATION, vol.215, no.2, pp.746-758, 2009 (SCI-Expanded)

XI. **Cosine expansion-based differential quadrature method for numerical solution of the KdV equation**
Saka B.
CHAOS SOLITONS & FRACTALS, vol.40, no.5, pp.2181-2190, 2009 (SCI-Expanded)

XII. **A numerical solution of the RLW equation by Galerkin method using quartic B-splines**
Saka B., Dag İ.
COMMUNICATIONS IN NUMERICAL METHODS IN ENGINEERING, vol.24, no.11, pp.1339-1361, 2008 (SCI-Expanded)

XIII. **A numerical study of the Burgers' equation**
Saka B., Dag İ.
JOURNAL OF THE FRANKLIN INSTITUTE-ENGINEERING AND APPLIED MATHEMATICS, vol.345, no.4, pp.328-348, 2008 (SCI-Expanded)

XIV. **Three different methods for numerical solution of the EW equation**
Saka B., Dag İ., DERELİ Y., Korkmaz A.
ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS, vol.32, no.7, pp.556-566, 2008 (SCI-Expanded)

XV. **A B-spline algorithm for the numerical solution of Fisher's equation**
Sahin A., Dag İ., Saka B.

KYBERNETES, vol.37, pp.326-342, 2008 (SCI-Expanded)

XVI. **Quintic B-spline collocation method for numerical solution of the RLW equation**
Saka B., Dag İ., IRK D.
ANZIAM JOURNAL, vol.49, no.3, pp.389-410, 2008 (SCI-Expanded)

XVII. **Algorithms for numerical solution of the modified equal width wave equation using collocation method**
Saka B.
MATHEMATICAL AND COMPUTER MODELLING, vol.45, pp.1096-1117, 2007 (SCI-Expanded)

XVIII. **Quartic B-spline collocation method to the numerical solutions of the Burgers' equation**
Saka B., Dag İ.
CHAOS SOLITONS & FRACTALS, vol.32, no.3, pp.1125-1137, 2007 (SCI-Expanded)

XIX. **Quartic B-spline collocation algorithms for numerical solution of the RLW equation**
Saka B., Dag İ.
NUMERICAL METHODS FOR PARTIAL DIFFERENTIAL EQUATIONS, vol.23, no.3, pp.731-751, 2007 (SCI-Expanded)

XX. **Galerkin method for the numerical solution of the RLW equation using quintic B-splines**
Dag İ., Saka B., Irk D.
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.190, pp.532-547, 2006 (SCI-Expanded)

XXI. **A finite element method for equal width equation**
Saka B.
APPLIED MATHEMATICS AND COMPUTATION, vol.175, no.1, pp.730-747, 2006 (SCI-Expanded)

XXII. **A small time solutions for the Korteweg-de Vries equation using spline approximation**
Irk D., Dag İ., Saka B.
APPLIED MATHEMATICS AND COMPUTATION, vol.173, no.2, pp.834-846, 2006 (SCI-Expanded)

XXIII. **B-spline Galerkin methods for numerical solutions of the Burgers' equation**
Dag İ., Saka B., Boz A.
APPLIED MATHEMATICS AND COMPUTATION, vol.166, no.3, pp.506-522, 2005 (SCI-Expanded)

XXIV. **A numerical solution of the Burgers' equation using cubic B-splines**
Dag İ., Irk D., Saka B.
APPLIED MATHEMATICS AND COMPUTATION, vol.163, no.1, pp.199-211, 2005 (SCI-Expanded)

XXV. **A collocation method for the numerical solution of the RLW equation using cubic B-spline basis**
Saka B., Dag İ.
ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING, vol.30, pp.39-50, 2005 (SCI-Expanded)

XXVI. **Application of cubic B-splines for numerical solution of the RLW equation**
Dag İ., Saka B., Irk D.
APPLIED MATHEMATICS AND COMPUTATION, vol.159, no.2, pp.373-389, 2004 (SCI-Expanded)

XXVII. **Galerkin method for the numerical solution of the RLW equation using quadratic B-splines**
Saka B., Dag İ., Dogan A.
INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS, vol.81, no.6, pp.727-739, 2004 (SCI-Expanded)

XXVIII. **B-spline collocation methods for numerical solutions of the RLW equation**
Dag İ., Dogan A., Saka B.
INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS, vol.80, no.6, pp.743-757, 2003 (SCI-Expanded)

## Articles Published in Other Journals

I. **A septic B spline finite element method for solving the nonlinear Schröndinger equation**
SAKA B., DAĞ İ.
advanced studies in contemporary mathematics, vol.26, no.3, pp.527-540, 2016 (Scopus)

II. **A Septic B spline Finite Element Method for Solving the Nonlinear Schrödinger Equation**
SAKA B., DAĞ İ.
Advanced Studies in Contemporary Mathematics, vol.26, no.3, pp.527-540, 2016 (Peer-Reviewed Journal)

III. **Numerical Solution of the Modified Burgers Equation by the Quintic B spline Galerkin Finite Element Method**
SAKA B., DAĞ İ., IRK D.
International Journal of Mathematics and Statistics, vol.1, pp.86-98, 2007 (Peer-Reviewed Journal)

IV. **Numerical Solutions of the modified Burgers Equation by the Quintic B spline Galerkin Finite Element Method**
SAKA B., DAĞ İ., IRK D.
International Journal of Mathematics and Statistics, vol.1, pp.86-97, 2007 (Peer-Reviewed Journal)

V. **A Cubic B spline Collocation Method for the EW Equation**
DAĞ İ., SAKA B.
Mathematical and Computational Applications, vol.9, pp.381-392, 2005 (Peer-Reviewed Journal)

VI. **Burger Denkleminin Sayısal Çözümleri İçin Sonlu Fark Metotları**
SAKA B., IRK D.
DPÜ Fen Bilimleri Enstitüsü Dergisi, vol.5, pp.87-96, 2003 (Peer-Reviewed Journal)

VII. **Finite Difference Methods for Numerical Solutions of the RLW Equation**
SAKA B.
Pure and Applied Mathematika Sciences, pp.43-52, 2003 (Peer-Reviewed Journal)

VIII. **A Numerical Study of the Equal Width Equation Hadronic Journal Supplement**
SAKA B., IRK D., DAĞ İ.
Hadronic Journal Supplement, vol.18, no.1, pp.99-115, 2003 (Peer-Reviewed Journal)

IX. **A numerical study of the equal width equation**
SAKA B., IRK D., DAĞ İ.
Hadronic Journal Supplement, vol.1, pp.99-115, 2003 (Peer-Reviewed Journal)

X. **Cubic Spline Collocation Method for the Equal Width Equation**
IRK D., SAKA B., DAĞ İ.
Hadronic Journal Supplement, vol.18, pp.201-214, 2003 (Peer-Reviewed Journal)

XI. **Numerical study of the equal width wave equation**
SAKA B., IRK D., DAĞ İ.
Hadronic Journal of Supplementary, vol.18, pp.99-116, 2003 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

I. **Least Squares Method for the numerical solution of Regularized Long Wave Equation**
SAKA B., ERSOY HEPSON Ö.
International Conference on Applied Analysis and Mathematical Modelling (ICAAMM2017), İstanbul, Turkey, 3 - 07 July 2017

II. **Least Squares Method for the numerical solution of Burgers'xx Equation**
SAKA B., ERSOY HEPSON Ö.
International Conference on Applied Analysis and Mathematical Modelling (ICAAMM2017), İstanbul, Turkey, 3 - 07 July 2017

III. **A Numerical Solution of the Kuramoto-Sivashinsky Equation byCollocation Method using Quintic Trigonometric B-spline**
SAKA B., ZORŞAHİN GÖRGÜLÜ M., DAĞ İ.
International Conference on Mathematics and Mathematics Education(ICMME-2017), 11 - 13 May 2017

IV. **Quartic B-spline Galerkin Method for the Advection Diffusion Equation**
IRK D., Ay B., SAKA B.
Mathematical Methods in Engineering, MME-2017, Ankara, Turkey, 27 - 29 April 2017

V. **A Quintic Trigonometric B-spline Collocation Method for Solving the Kuramoto-Sivashinsky Equation**
SAKA B., ŞEBER Y., DAĞ İ.
MATHEMATICAL METHODS IN ENGINEERING, MME-2017, Ankara, Turkey, 27 - 29 April 2017

VI. **A Quartic Trigonometric B-spline Collocation Method for Solving the Kuramoto-Sivashinsky Equation**
SAKA B., ERSOY HEPSON Ö., DAĞ İ.
The International Workshop on Mathematical Methods in Engineering (MME2017), 27 - 29 April 2017

VII. **A Numerical Solution of the RLW Equation by Least Squares Method**
SAKA B., Çayır Aydar A., IRK D.
Mathematical Methods in Engineering, MME-2017, Ankara, Turkey, 27 - 29 April 2017

VIII. **A quintic trigonometric B-splines collocation method for solving the Kuramoto-Sivashinsky equation**
SAKA B., DAĞ İ., Seber Y.
International workshop on mathematical methods in engineering, Ankara, Turkey, 27 April 2016 - 29 April 2018

IX. **A Quartic Trigonometric B spline Collocation Method for Solving the Nonlinear Schrödinger Equation**
SAKA B., ZORŞAHİN GÖRGÜLÜ M.
International Conference on Mathematics and Mathematics Education (ICMME-2016), Turkey, 12 - 14 May 2016

X. **A Trigonometric B spline Finite Element Method for Equal Width Equation**
SAKA B., ZORŞAHİN GÖRGÜLÜ M.
International Conference on Mathematics and Mathematics Education (ICMME-2016), Turkey, 12 - 14 May 2016

XI. **A Quintic Trigonometric B spline Finite Element Method for Solving the Nonlinear Schrödinger Equation**
SAKA B., IRK D.
International Conference on Mathematics and Mathematics Education (ICMME-2016), Turkey, 12 - 14 May 2016

XII. **Quintic Trigonometric B spline Collocation Method to the Numerical Solution of the Burgers Equation**
IRK D., SAKA B.
International Conference on Mathematics and Mathematics Education (ICMME-2016), Turkey, 12 - 14 May 2016

XIII. **Quintic Trigonometric B spline Collocation Method for Numerical Solution of the RLW Equation**
SAKA B.
International Conference on Natural Science and Engineering (ICNASE'16), Turkey, 19 - 20 March 2016

XIV. **A Cubic B spline Algorithm for Numerical Solution of the KdVB equation**
SAKA B., ZORŞAHİN GÖRGÜLÜ M.
14. Matematik Sempozyumu, Turkey, 14 - 16 May 2015

XV. **KdVB Denkleminin Kübik B Spline Galerkin Yöntemiyle Nümerik Çözümü**
SAKA B., ZORŞAHİN GÖRGÜLÜ M.
14. Matematik Sempozyumu, Turkey, 14 - 16 May 2015

XVI. **A Cubic B spline Galerkin Method for Solving the Nonlinear Schrödinger Equation**
SAKA B., ÜLKER S.
14. Matematik Sempozyumu, Turkey, 14 - 16 May 2015

XVII. **Numerical Solutions of the RLW Equation Using Trigonometric Quadratic B splines Subdomain Galerkin method**
SAKA B., ZORŞAHİN GÖRGÜLÜ M.
14. Matematik Sempozyumu, Turkey, 14 - 16 May 2015

XVIII. **A Septic B spline Finite Element Method for Solving the Nonlinear Schrödinger Equation**
SAKA B., DAĞ İ.
International Eurasian Conference on Mathematical Sciences and Applications, 25 - 28 August 2014

XIX. **A Sextic B spline Finite Element Method for Solving the Nonlinear Schrödinger Equation**
SAKA B., DAĞ İ.
Karatekin Mathematics Days,International Mathematics Symposium, 11 - 13 June 2014

XX. **Kuintik B spline Galerkin metodu ile KdV denkleminin sayısal çözümü**
SAKA B., DAĞ İ.
XX. Ulusal Matematik Sempozyumu, Turkey, 3 - 06 September 2007

XXI. **Quintic B spline Galerkin Method for Numerical Solutions of the Burgers Equation**
DAĞ İ., SAKA B., BOZ A.

Dynamical Systems and Applications, 5 - 10 July 2004, pp.295-309

## Supported Projects

SAKA B., Project Supported by Higher Education Institutions, Kuramoto-Sivashinsky denkleminin yaklaşık çözümünün trigonometrik B-spline fonksiyonları yardımıyla bulunması, 2016 - 2017

## Metrics

Publication: 60
Citation (WoS): 784
Citation (Scopus): 829
H-Index (WoS): 16
H-Index (Scopus): 17

## Non Academic Experience

Eskişehir Osmangazi Üniversitesi