Prof. SELÇUK KUTLUAY

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Education Information

Doctorate, University of Bradford, Department Of Mathematics, Applied Mathematics, United Kingdom 1989 - 1993
Postgraduate, Inonu University, Fen Bilimleri Enstitüsü, Matematik Bölümü / Uygulamalı Matematik Anabilim Dalı, Turkey 1985 - 1988
Undergraduate, Inonu University, Fen-Edebiyat Fakültesi, Matematik Bölümü, Turkey 1980 - 1984

Foreign Languages

English, B2 Upper Intermediate

Dissertations

Doctorate, Moving Evolutionary Behaviour of a Thermistor, University of Bradford, Department Of Mathematics /, Applied Mathematics, 1993
Postgraduate, Predictor-Corrector Method and Convergence Analysis, Inonu University, Fen Bilimleri Enstitüsü /, Matematik Bölümü / Uygulamalı Matematik Anabilim Dalı, 1987

Research Areas

Mathematics, Differential Equations, Numerical Analysis, Natural Sciences

Academic Titles / Tasks

Professor, Inonu University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 2006 - Continues
Assistant Professor, Inonu University, Fen-Edebiyat Fakültesi, Matematik Bölümü , 1994 - 2000
Research Assistant, University of Bradford, Matematik Bölümü, Matematik Bölümü, 1988 - 1993
Research Assistant, Inonu University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 1984 - 1988

Academic and Administrative Experience

Inonu University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 2006 - 2012
Inonu University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 2008 - 2011

Inonu University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 1998 - 1999

Courses

DİFERANSİYEL DENKLEMLER II, Undergraduate, 2013-2014
SONLU FARK YÖNTEMLERİ, Undergraduate Double Major, 2013-2014
DİFERANSİYEL DENKLEMLER I, Undergraduate, 2013-2014
SONLU FARK YÖNTEMLERİ, Undergraduate Minor, 2013-2014
SONLU FARK YÖNTEMLERİ, Undergraduate Minor, 2012-2013
SONLU FARK YÖNTEMLERİ, Undergraduate Double Major, 2012-2013
DİFERANSİYEL DENKLEMLER I, Undergraduate, 2012-2013
GENEL MATEMATİK I-II, Undergraduate, 2012-2013
GENEL MATEMATİK I-II, Associate Degree, 2012-2013
İLERİ NÜMERİK ANALİZ , Undergraduate Double Major, 2012-2013
DİFERANSİYEL DENKLEMLER II, Undergraduate, 2012-2013
SONLU FARK YÖNTEMLERİ, Undergraduate Double Major, 2011-2012
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SONLU ELEMAN YÖNTEMLERİ II, Undergraduate Minor, 2010-2011
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SONLU ELEMAN YÖNTEMLERİ I, Undergraduate Minor, 2006-2007
GENEL MATEMATİK I-II, Associate Degree, 2006-2007
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GENEL MATEMATİK I-II, Associate Degree, 2005-2006
KISMİ DİFERANSİYEL DENKLEMLER, Undergraduate, 2004-2005
NÜMERİK (SAYISAL) ANALİZ I, Undergraduate, 2004-2005
SONLU FARK YÖNTEMLERİ, Undergraduate Minor, 2004-2005
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NÜMERİK (SAYISAL) ANALİZ I, Undergraduate, 2000-2001
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Advising Theses

KUTLUAY S., Rosenau-Kawahara Denkleminin Sayısal Çözümü Üzerine bir Çalışma, Postgraduate, H.ÖZDEMİR(Student), Continues
KUTLUAY S., Rosenau-RLW Denkleminin Çözümü için Sonlu Fark Yöntemi üzerine Temellenmiş bir Nümerik Şema, Postgraduate, A.PEHLEVAN(Student), Continues
KUTLUAY S., 2-Boyutlu Lineer Olmayan Burgers Denklemi için Sonlu Fark Yaklaşımları, Postgraduate, O.DEMİRTAŞ(Student), Continues
KUTLUAY S., 1-Boyutlu Rosenau-KdV Denklemi ve Nümerik Çözümü, Postgraduate, N.SAKAR(Student), Continues
KUTLUAY S., Isı İletim Denkleminin Klasik Sonlu Fark Yöntemleri ile Ayrıklaştırılmış Şemalarının Değişkenlerine Ayırma Tekniğiyle Çözümleri, Postgraduate, S.Ertaş(Student), 2019
KUTLUAY S., 1-Boyutlu Burgers' Denkleminin Multikuadrik Radyal Baz Fonksiyonu ile Nümerik Çözümleri, Postgraduate, Y.SARIBAŞ(Student), 2019
KUTLUAY S., 1-Boyutlu Korteweg-de Veries (KdV) Denkleminin Multikuadrik Radyal Baz Fonksiyonu ile Nümerik Çözümleri, Postgraduate, M.KÖYLÜ(Student), 2019
KUTLUAY S., Düzenli Uzun Dalga (RLW) Denkleminin Sonlu Fark Yöntemleri ile Çözümleri, Postgraduate, Ş.YALVAÇ(Student), 2016
KUTLUAY S., Esit Genişlikli Dalga (EW) Denkleminin Sonlu Fark Yöntemleri İle Çözümleri, Postgraduate, M.Hanifi(Student), 2014
KUTLUAY S., B-Spline Sonlu Eleman Yöntemleri ile Coupled Diferansiyel Denklemlerin Nümerik Çözümleri, Doctorate, Y.UÇAR(Student), 2011
KUTLUAY S., 2-Boyutlu Kısmi Diferansiyel Denklemlerin B-spline Sonlu Eleman Yöntemleri ile Nümerik Çözümleri, Doctorate, N.Murat(Student), 2011
KUTLUAY S., Parçalanmış 1-Boyutlu Burgers Denkleminin Sonlu Fark Yöntemleri ile Nümerik Çözümleri, Postgraduate, M.SEYDAOĞLU(Student), 2010
KUTLUAY S., Klasik Sonlu Fark Yöntemleri ve Uygulamaları, Postgraduate, B.BULUT(Student), 2007
KUTLUAY S., 1-Boyutlu Burgers tipi denklemlerin sonlu fark çözümleri, Postgraduate, Y.UÇAR(Student), 2005
KUTLUAY S., Termistör Probleminin B-spline Sonlu Eleman Yöntemleri ile Çözümleri, Doctorate, A.ESEN(Student), 2003
KUTLUAY S., 1-Boyutlu Hareketli Sınır Değer (Stefan) Problemleri için Nümerik Çözüm Yöntemleri, Postgraduate, A.ESEN(Student), 1997

Published journal articles indexed by SCI, SSCI, and AHCI

I. **An efficient Strang splitting technique combined with the multiquadric-radial basis function for the Burgers' equation**
SEYDAOĞLU M., UÇAR Y., KUTLUAY S.
COMPUTATIONAL & APPLIED MATHEMATICS, vol.40, no.8, 2021 (SCI-Expanded)

II. **Strang time-splitting technique for the generalised Rosenau-RLW equation**
KUTLUAY S., Karta M., UÇAR Y.
PRAMANA-JOURNAL OF PHYSICS, vol.95, no.3, 2021 (SCI-Expanded)

III. **Operator time-splitting techniques combined with quintic B-spline collocation method for the generalized Rosenau-KdV equation**
KUTLUAY S., Karta M., YAĞMURLU N. M.
NUMERICAL METHODS FOR PARTIAL DIFFERENTIAL EQUATIONS, vol.35, no.6, pp.2221-2235, 2019 (SCI-Expanded)

IV. **Numerical Solutions of the Modified Burgers Equation by a Cubic B-spline Collocation Method**
KUTLUAY S., UÇAR Y., YAĞMURLU N. M.
BULLETIN OF THE MALAYSIAN MATHEMATICAL SCIENCES SOCIETY, vol.39, no.4, pp.1603-1614, 2016 (SCI-Expanded)

V. **Numerical solutions of the coupled Burgers' equation by the Galerkin quadratic B-spline finite element method**
KUTLUAY S., UÇAR Y.
MATHEMATICAL METHODS IN THE APPLIED SCIENCES, vol.36, no.17, pp.2403-2415, 2013 (SCI-Expanded)

VI. **Numerical solution of a coupled modified Korteweg-de Vries equation by the Galerkin method using quadratic B-splines**
KUTLUAY S., UÇAR Y.
INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS, vol.90, no.11, pp.2353-2371, 2013 (SCI-Expanded)

VII. **A Quadratic B-Spline Galerkin Approach for Solving a Coupled KdV Equation**
KUTLUAY S., UÇAR Y.
MATHEMATICAL MODELLING AND ANALYSIS, vol.18, no.1, pp.103-121, 2013 (SCI-Expanded)

VIII. **The (G '/G)-expansion method for some nonlinear evolution equations**
KUTLUAY S., ESEN A., TASBOZAN O.
APPLIED MATHEMATICS AND COMPUTATION, vol.217, no.1, pp.384-391, 2010 (SCI-Expanded)

IX. **Application of the Exp-function method to the two dimensional sine-Gordon equation**
ESEN A., KUTLUAY S.
INTERNATIONAL JOURNAL OF NONLINEAR SCIENCES AND NUMERICAL SIMULATION, vol.10, no.10, pp.1355-1359, 2009 (SCI-Expanded)

X. **Exp-function Method for Solving the General Improved KdV Equation**
KUTLUAY S., ESEN A.
INTERNATIONAL JOURNAL OF NONLINEAR SCIENCES AND NUMERICAL SIMULATION, vol.10, no.6, pp.717-725, 2009 (SCI-Expanded)

XI. **New Solitonary Solutions for the Generalized RLW Equation by He's Exp-function Method**
ESEN A., KUTLUAY S.
INTERNATIONAL JOURNAL OF NONLINEAR SCIENCES AND NUMERICAL SIMULATION, vol.10, no.5, pp.551-556, 2009 (SCI-Expanded)

XII. **Solitary wave solutions of the modified equal width wave equation**
ESEN A., KUTLUAY S.
COMMUNICATIONS IN NONLINEAR SCIENCE AND NUMERICAL SIMULATION, vol.13, no.8, pp.1538-1546, 2008 (SCI-Expanded)

XIII. **A heat balance integral solution of the thermistor problem with a modified electrical conductivity**
Kutluay S., WOOD A., Esen A.
APPLIED MATHEMATICAL MODELLING, vol.30, no.4, pp.386-394, 2006 (SCI-Expanded)

XIV. **Application of a lumped Galerkin method to the regularized long wave equation**
Esen A., Kutluay S.
APPLIED MATHEMATICS AND COMPUTATION, vol.174, no.2, pp.833-845, 2006 (SCI-Expanded)

XV. **A linearized implicit finite-difference method for solving the equal width wave equation**
Esen A., Kutluay S.
INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS, vol.83, no.3, pp.319-330, 2006 (SCI-Expanded)

XVI. **A finite difference solution of the regularized long-wave equation**
Kutluay S., Esen A.
MATHEMATICAL PROBLEMS IN ENGINEERING, vol.2006, 2006 (SCI-Expanded)

XVII. **Numerical schemes for one-dimensional Stefan-like problems with a forcing term**
Kutluay S.
APPLIED MATHEMATICS AND COMPUTATION, vol.168, no.2, pp.1159-1168, 2005 (SCI-Expanded)

XVIII. **Numerical solution of Burgers' equation by quadratic B-spline finite elements**
OZIS T., Esen A., Kutluay S.
APPLIED MATHEMATICS AND COMPUTATION, vol.165, no.1, pp.237-249, 2005 (SCI-Expanded)

XIX. **An analytical-numerical method for solving the Korteweg-de Vries equation**
OZER S., Kutluay S.
APPLIED MATHEMATICS AND COMPUTATION, vol.164, no.3, pp.789-797, 2005 (SCI-Expanded)

XX. **Finite element approaches to the PTC thermistor problem**
Kutluay S., Esen A.
APPLIED MATHEMATICS AND COMPUTATION, vol.163, no.1, pp.147-162, 2005 (SCI-Expanded)

XXI. **Numerical solutions of the thermistor problem by spline finite elements**
Kutluay S., Esen A.
APPLIED MATHEMATICS AND COMPUTATION, vol.162, no.1, pp.475-489, 2005 (SCI-Expanded)

XXII. **Finite element solution of the thermistor problem with a ramp electrical conductivity**
Kutluay S., ESEN A.
APPLIED MATHEMATICS AND COMPUTATION, vol.161, no.3, pp.897-913, 2005 (SCI-Expanded)

XXIII. **A lumped Galerkin method for solving the Burgers equation**
Kutluay S., Esen A.
INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS, vol.81, no.11, pp.1433-1444, 2004 (SCI-Expanded)

XXIV. **A B-spline finite element method for the thermistor problem with the modified electrical conductivity**
Kutluay S., Esen A.
APPLIED MATHEMATICS AND COMPUTATION, vol.156, no.3, pp.621-632, 2004 (SCI-Expanded)

XXV. **A linearized numerical scheme for Burgers-like equations**
Kutluay S., Esen A.
APPLIED MATHEMATICS AND COMPUTATION, vol.156, no.2, pp.295-305, 2004 (SCI-Expanded)

XXVI. **Numerical solutions of the Burgers' equation by the least-squares quadratic B-spline finite element method**
Kutluay S., Esen A., Dag I.
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.167, no.1, pp.21-33, 2004 (SCI-Expanded)

XXVII. **An isotherm migration formulation for one-phase Stefan problem with a time dependent Neumann condition**
Kutluay S., Esen A.
APPLIED MATHEMATICS AND COMPUTATION, vol.150, no.1, pp.59-67, 2004 (SCI-Expanded)

XXVIII. **A numerical solution of the Stefan problem with a Neumann-type boundary condition by enthalpy method**
Esen A., Kutluay S.
APPLIED MATHEMATICS AND COMPUTATION, vol.148, no.2, pp.321-329, 2004 (SCI-Expanded)

XXIX. **Numerical solutions of the thermistor problem with a ramp electrical conductivity**
Kutluay S., WOOD A.
APPLIED MATHEMATICS AND COMPUTATION, vol.148, no.1, pp.145-162, 2004 (SCI-Expanded)

XXX. **A small time solutions for the Korteweg-de Vries equation**
Kutluay S., Bahadir A. R., Ozdes A.
APPLIED MATHEMATICS AND COMPUTATION, vol.107, pp.203-210, 2000 (SCI-Expanded)

XXXI. **A variety of finite difference methods to the thermistor with a new modified electrical conductivity**
Kutluay S., Bahadir A. R., Ozdes A.

APPLIED MATHEMATICS AND COMPUTATION, vol.106, pp.205-213, 1999 (SCI-Expanded)

XXXII. **Various methods to the thermistor problem with a bulk electrical conductivity**
Kutluay S., Bahadir A. R., Ozdes A.
INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN ENGINEERING, vol.45, no.1, pp.1-12, 1999 (SCI-Expanded)

XXXIII. **Numerical solution of one-dimensional Burgers equation: explicit and exact-explicit finite difference methods**
Kutluay S., Bahadir A. R., Ozdes A.
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.103, no.2, pp.251-261, 1999 (SCI-Expanded)

XXXIV. **The numerical solution of one-phase classical Stefan problem**
Kutluay S., Bahadir A. R., Ozdes A.
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.81, no.1, pp.135-144, 1997 (SCI-Expanded)

XXXV. **A HEAT-BALANCE INTEGRAL MODEL OF THE THERMISTOR**
WOOD A., KUTLUAY S.
INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER, vol.38, no.10, pp.1831-1840, 1995 (SCI-Expanded)

Articles Published in Other Journals

I. **An Effective Numerical Approach Based on Cubic Hermite B-spline Collocation Method for Solving the 1D Heat Conduction Equation**
KUTLUAY S., YAĞMURLU N. M., Karakaş A. S.
New Trends in Mathematical Sciences, vol.10, no.4, pp.20-31, 2022 (Peer-Reviewed Journal)

II. **A Finite Element Method to Solve the System of Two-dimensional Burgers' Equations**
KUTLUAY S., YAGMURLU N. M., UÇAR Y., TASBOZAN O.
INTERNATIONAL JOURNAL OF ENGINEERING MATHEMATICS AND PHYSICS, vol.1, pp.1-10, 2019 (Peer-Reviewed Journal)

III. **Exact solutions of nonlinear evolution equations using the extended modified Exp(-Omega(xi)) function method**
KARAAĞAÇ B., Kutluay S., Yagmurlu N. M., ESEN A.
TBILISI MATHEMATICAL JOURNAL, vol.12, no.3, pp.109-119, 2019 (ESCI)

IV. **A Finite Element Method to Solve the System of Two-dimensional Burger' Equations**
KUTLUAY S., YAĞMURLU N. M., UÇAR Y., TAŞBOZAN O.
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V. **Numerical solutions of Rosenau-RLW equation using Galerkin cubic B-spline finite element method**
YAGMURLU N. M., KARAAGAC B., KUTLUAY S.
AMERICAN JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.7, no.1, pp.1-10, 2017 (Peer-Reviewed Journal)

VI. **The ModifBi-quintic B-spline Base Functions: An Application to Diffusion Equation**
KUTLUAY S., YAGMURLU N. M.
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VII. **The Modified Bi-Quintic B-spline Base Functions: An Application to Diffusion Equation**
KUTLUAY S., YAĞMURLU N. M.
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VIII. **Numerical Solutions of Rosenau-RLW Equation Using Galerkin Cubic B-Spline Finite Element Method**
YAĞMURLU N. M., KARAAĞAÇ B., KUTLUAY S.
American Journal of Computational and Applied Mathematics, vol.7, no.1, pp.1-10, 2017 (Peer-Reviewed Journal)

IX. **A Numerical Approach to the Rosenau-KdV equation using Galerkin Cubic Finite Element Method**
UÇAR Y., KARAAGAC B., KUTLUAY S.

INTERNATIONAL JOURNAL OF APPLIED MATHEMATICS & STATISTICS, vol.56, no.3, pp.83-92, 2017 (ESCI)

X. **Approximate Analytical Solutions of the Damped Burgers and Boussinesq Burgers Equations**
ESEN A., TAŞBOZAN O., KUTLUAY S.
Çankaya University Journal of Science and Engineering, vol.11, no.1, pp.65-76, 2014 (Peer-Reviewed Journal)

XI. **Derivation of the modified Bi-quintic B-spline base functions: an application to poisson equation**
KUTLUAY S., YAGMURLU N. M.
AMERICAN JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.3, no.1, pp.26-32, 2013 (Peer-Reviewed Journal)

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XIII. **Applications of the Exp function Method for the MkdV Sine Gordon and Boussinesq double Sine Gordon Equations**
ESEN A., TAŞBOZAN O., KUTLUAY S.
World Applied Sciences Journal, vol.22, no.1, pp.147-151, 2013 (Peer-Reviewed Journal)

XIV. **The modified B--quintic B-splines for solving the two-dimensionalunsteady Burgers'equation**
KUTLUAY S., YAGMURLU N. M.
EUROPEAN INTERNATIONAL JOURNAL OF SCIENCE AND TECHNOLOGY, vol.1, no.2, pp.23-39, 2012 (Peer-Reviewed Journal)

XV. **Approximate Analytical Solutions of Fractional Coupled mKdV Equation by Homotopy Analysis Method**
Taşbozan O., ESEN A., KUTLUAY S.
Open Journal of Applied Sciences, vol.2, pp.193-197, 2012 (Peer-Reviewed Journal)

XVI. **Approximate Analytical Solutions of Fractional Coupled mKdV Equation by Homotopy Analysis Method**
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Metrics

Publication: 66
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Citation (Scopus): 812
H-Index (WoS): 15
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