

Resume

Vedat Suat ERTÜRK

Contact Information: Department of Mathematics, Faculty of Arts and Sciences, 19 Mayıs University, Atakum,SAMSUN

Research Interest: Numerical Solutions of Differential Equations and Numerical Analysis

Education: Ph.D. in Applied Mathematics from 19 Mayıs University, 2000. Thesis advisor: H.Demir. Thesis title: The Properties of non-newtonian fluids time-independent motions in two-dimensional plane.

MSc. in Applied Mathematics from 19 Mayıs University, 1994. Thesis advisor: A.Altın. Thesis title: Potential Equation and Its Applications.

Work Experience:

Associate Professor of Applied Math., 19 Mayıs University, 2010-present.

Assistant Professor of Applied Math., 19 Mayıs University, 2000-2009.

Research Associate, University of Oklahoma , July-December 2002.

Teaching Assistant, 19 Mayıs University, 1990-2000

Master Students: Zeynep Karabulut, Date Completed , July, 2013.

Tarık Baş, Expected Date of Graduation, September, 2015.

Hatice Türkoğlu, Expected Date of Graduation, September, 2016.

Canan Tekin, Expected Date of Graduation, September, 2016.

Refereed Publications:

- Akyıldız, F.T., Demir, H., **Ertürk, V.S.**, “Peristaltic flow of a third-grade fluid in a planar channel”, Mathematical and Computational Applications, 4(2),113-120,1999.
- **Ertürk, V.S.**, “n-değişkenli Laplace Denkleminin Çözümleri için İnversiyon Prensipleri”, O.M.Ü. Fen Dergisi, 9-10(1),182-192, 1998-1999.
- **Ertürk, V.S.**, Demir, H., “Viskometrik Akışkanlar Denklemlerinin Tensör Dönüşümleri ve Sınıflandırılması”, Journal of Scientific Research Foundation, 3(1-2-3), 39-51,1998.
- **Ertürk, V.S.**,Demir,H., Muhtarov,O., “Stability properties of the solution of parabolic type of equations by finite-differences methods

at mathematical physics”, F.Ü.Fen ve Müh. Bilimleri Dergisi, 11(3), 367-378,1999.

- Demir, H., **Ertürk,V.S.**, “Newtoniyen Olmayan Akışkanların İki Boyutlu Düzlemdeki Doğal Isı Transfери ve Özellikleri”, XII. Ulusal Matematik Sempozyumu, 6-10 Eylül, Malatya,1999.
- Demir, H., **Ertürk,V.S.** “A numerical study of wall-driven flow of a viscoelastic fluid in rectangular cavities”, Indian Journal of Pure and Applied Mathematics, 32(10),1581-1590, 2001(**SCI**).
- **Ertürk, V. S.**, Momani, S., “A reliable algorithm for solving tenth-order boundary value problems”, Numerical Algorithms, 44(2), 147-158, 2007(**SCI-Exp**).
- Momani, S., Odibat, Z., **Ertürk, V. S.**, “Generalized differential transform method for solving a space and time-fractional diffusion-wave equation”, Physics Letters A, 370(5-6), 379-387,2007(**SCI-Exp**).
- **Ertürk, V. S.**, Momani, S., “Comparing numerical methods for solving fourth-order boundary value problems”, Applied Mathematics and Computation, 188(2), 1963-1968, 2007 (**SCI**).
- Momani, S., **Ertürk, V. S.**, “Solutions of non-linear oscillators by the modified differential transform method”, Computers&Mathematics with Applications, 55(4), 833-842, 2008(**SCI**).
- Momani, S., **Ertürk, V.S.**, “A numerical scheme for the solution of viscous Cahn-Hilliard equation”, Numerical Methods for Partial Differential Equations, 24(2), 663-669, 2008(**SCI-Exp**).
- Momani, S., **Ertürk, V.S.**, “Solving a system of fourth-order obstacle boundary value problems by differential transform method”, Kybernetes, 37(2), 315-325, 2008(**SCI-Exp**).
- **Ertürk, V.S.**, Momani, S., “Solving systems of fractional differential equations using differential transform method”, Journal of Computational and Applied Mathematics, 215(1), 142-151, 2008(**SCI**).

- Odibat, Z., Momani, S., **Ertürk, V.S.**, “Generalized differential transform method: Application to differential equations of fractional order”, *Applied Mathematics and Computation*, 197(1), 467-477, 2008(**SCI**).
- **Ertürk, V.S.**, Momani, S., “Solutions of the problem of prey and predator and the epidemic model via differential transform method”, *Kybernetes*, 37(8), 1180-1188, 2008(**SCI-Exp**).
- **Ertürk, V.S.**, “Approximate solutions of a class of nonlinear differential equations by using differential transformation method”, *International Journal of Pure and Applied Mathematics*”, 30(3), 403-409, 2006.
- **Ertürk, V. S.**, “Application of differential transformation method to linear sixth-order boundary value problems”, *Applied Mathematical Sciences*, 1(2), 51-58, 2007.
- **Ertürk, V. S.**, “Approximate solutions of a class of boundary value problems by using differential transformation method”, *Far East Journal of Applied Mathematics*, 27(1), 39-44, 2007.
- Hassan, I.H.A.H., **Ertürk, V. S.**, “Applying differential transform method to the one-dimensional planar Bratu problem”, *International Journal of Contemporary Mathematical Sciences*, 2(30), 1493-1504, 2007.
- **Ertürk, V. S.**, “Differential transformation method for solving differential equations of Lane-Emden type”, *Mathematical and Computational Applications*, 12(3), 135-139, 2007.
- **Ertürk, V. S.**, Momani, S., “Differential transform method for obtaining positive solutions for two-point nonlinear boundary value problems”, *International Journal: Mathematical Manuscripts*, 1(1), 65-72, 2007.
- **Ertürk, V. S.**, “Solution of linear twelfth-order boundary value problems by using differential transform method”, *International Journal of Applied Mathematics&Statistics*, 13, No: M08, 57-63, 2008.

- **Ertürk, V. S.,** Momani, S.,”Differential transform technique for solving fifth-order boundary value problems”, *Mathematical and Computational Applications*, 13(2),113-121, 2008.
- **Ertürk, V.S.,** Momani, S., “Numerical solutions of two forms of Blasius equation on a half-infinite domain”, *Journal of Algorithms&Computational Technology*, 2(3), 359-370, 2008.
- **Ertürk,V.S.,** Momani, S., Odibat, Z.,“Application of generalized differential transform method to multi-order fractional differential equations”,*Communications in Nonlinear Science and Numerical Simulation*,13(8), 1642-1654, 2008.
- Hassan, I. H.A.H., Ertürk, V.S., “Solutions of Different Types of the linear and Non-linear Higher-Order Boundary Value Problems by Differential Transformation Method”, *European Journal of Pure and Applied Mathematics*, 2(3),426-447, 2009.
- **Ertürk, V.S.,** “Approximation of the solution of one Riccati equation by differential transformation method”, *Sakarya Üniversitesi, Fen Dergisi*, 8(1), 29-33, 2006.
- **Ertürk, V.S.,** “Differential transform method for solving a class of singular two-point boundary value problems”, *SDÜ Fen Dergisi(E-dergi)*, 1(1),70-76, 2006.
- **Ertürk, V.S.,** “Solving nonlinear fifth-order boundary value problems by differential transformation method”,*Selçuk Journal of Applied Mathematics*, 8(1),45-49, 2007.
- **Ertürk, V.S.,** “The use of differential transformation method for solving problems in Calculus of Variations”, *KSÜ Fen ve Mühendislik Dergisi*, 11(2), 23-31,2008.
- **Ertürk, V. S.,** “Goursat probleminin diferansiyel dönüşüm metodu ile tam çözümleri”, II. Türk Dünyası Matematik Sempozyumu, 4-7 Temmuz, Sakarya, 2007(poster sunumu).
- **Ertürk, V. S.,** “Bir boyutlu biharmonik denklemlerin diferansiyel dönüşüm metodu ile yaklaşık çözümü”, XX. Ulusal Matematik Sempozyumu, 03-06 Eylül, Erzurum, 2007.

- Al-rabtah, A., **Ertürk, V.S.**, Momani, S., Solutions of a fractional oscillator by using differential transform method, *Computers&Mathematics with Applications*, 59(3), 1356-1362, 2010(**SCI-Exp**).
- **Ertürk, V.S.**, Odibat, Z. M., Momani, S., “An approximate solution of a fractional order differential equation model of human T-cell lymphotropic virus I (HTLV-I) infection of CD4⁺ T-cells”, *Computers&Mathematics with Applications*, 62(3), 996-1002, 2011(**SCI-Exp**).
- Merdan, M., Gökdoğan, A., **Ertürk, V.S.**, “An approximate solution of a model for HIV infection of CD4⁺ T cells”, *Iranian Journal of Science & Technology*, 35(A1), 9-12, 2011(**SCI**).
- Abu-Gurra, S., **Ertürk, V.S.**, Momani, S., “Application of the modified differential transform method to fractional oscillators”, *Kybernetes*, 40(5-6), 751-761, 2011(**SCI-Exp**).
- Doğan, N., **Ertürk, V.S.**, Akın, Ö., “Numerical Treatment of Singularly Perturbed Two-Point Boundary Value Problems by Using Differential Transformation Method”, *Discrete Dynamics in Nature and Society*, Volume 2012 (2012), Article ID 579431, 10 pages (**SCI-Exp**).
- Gökdoğan, A., Merdan, M., **Ertürk, V.S.**, “A multistage variational iteration method for approximate-analytic solution of avian-human influenza epidemic model”, *Kuwait Journal of Science and Engineering*, 39(2A), 57-67, 2012(**SCI-Exp**).
- **Ertürk, V.S.**, Odibat, Z.M., Momani, S., “The multi-step differential transform method and its application to determine the solutions of Non-Linear Oscillators”, *Advances in Applied Mathematics and Mechanics*, 4(4), 422-438, 2012(**SCI-Exp**).
- **Ertürk, V.S.**, Zaman, G., Momani, S., “A numeric-analytic method for approximating a giving up smoking model containing fractional derivatives”, *Computers&Mathematics with Applications*, 64(10), 3065-3074, 2012(**SCI-Exp**).

- **Ertürk, V.S.**, Odibat, Z.M., Momani, S., “Application of multi-step differential transform method for the analytic and numerical solutions of the density dependent Nagumo telegraph equation”, *Romanian Journal of Physics*, 57(7-8), 1065-1078, 2012(**SCI-Exp**).
- **Erturk, V.S.**, Yıldırım, A., Momani, S., Khan, Y., “The differential transform method and Padé approximants for a fractional population growth model”, *International Journal of Numerical Methods for Heat&Fluid Flow*, 22(6), 791-802, 2012(**SCI-Exp**).
- Gökdoğan, A., Merdan, M., **Ertürk, V.S.**, “A Multistage Variational Iteration Method for Solution of Delay Differential Equations”, *International Journal of Nonlinear Sciences and Numerical Simulation*, 14(3-4), 159-166, 2013(**SCI-Exp**).
- Zeb, A. Khan, M., Zaman, G., Momani, S, **Ertürk, V.S.**, “Comparison of Numerical Methods of the SEIR Epidemic Model of Fractional Order”, *Zeitschrift für Naturforschung A*, Vol. 69a, 1-2, 2014(**SCI-Exp**).
- S. Abbas, **V.S. Erturk**, S. Momani, Dynamical analysis of the Irving–Mullineux oscillator equation of fractional order, *Signal Processing*, 102, 171–176, 2014(**SCI-Exp**).
- Y. Xu and V. Suat Ertürk ,A finite difference technique for solving variable-order fractional integro-differential equations, *Bulletin of the Iranian Mathematical Society*, 40(3) 699 - 712, 2014(**SCI-Exp**).
- Doğan, N., Al-Quran, M., **Ertürk, V.S.**, Momani, S., “Variational iteration method for solving singularly perturbed two-point boundary value problems”, *International Journal of Pure and Applied Mathematics*, 58(1), 11-19, 2010.
- Momani, S., **Ertürk, V.S.**, Abu-gurra, S., “An approximation of the analytic solution of the Helmholtz equation”, *Studies in Nonlinear Sciences*, 1(2), 37-40, 2010.
- Momani, S., **Ertürk, V.S.**, “The solution of Flierl-Petviashvili equation and its variants using Dtm-Padé technique”, *World Applied Sciences Journal*, Volume 9, 32-38, 2010.

- **Ertürk, V.S.**, Momani, S., “On the generalized differential transform method: Application to fractional integro-differential equations”, *Studies in Nonlinear Sciences*, 1(3), 118-126, 2010.
- **Ertürk, V.S.**, “Computing eigenlements of Sturm-Liouville problems of fractional-order via fractional differential transform method”, *Mathematical and Computational Applications*, 16(3), 712-720, 2011.
- Merdan, M., Gökdoğan, A., **Ertürk, V.S.**, “A numeric-analytic method for approximating three-species food chain models”, *International Journal of the Physical Sciences*, 6(3), 1822-1833, 2011.
- Doğan, N., **Ertürk, V.S.**, Momani, S., Akın, Ö., Yıldırım, A., “Differential transform method for solving singularly perturbed Volterra integral equations”, *King Saud University- Journal of King Saud University-Science*, 23(2), 223-228, 2011.
- Anwar, Z., Zaman, G., Momani, S., **Ertürk, V.S.**, “Solution of an SEIR Epidemic Model in Fractional Order”, *VFAST Transactions on Mathematics*, 1(1),1-8, 2013.
- Anwar, Z., Zaman, G., Chohan, M.I., Momani, S., **Ertürk, V.S.**, “Analytic Numeric Solution for SIRC Epidemic Model in Fractional Order”, *Asian Journal of Mathematics and Applications*, Volume 2013, Article ID ama0058, 19 Pages.
- Doğan, N., **Ertürk, V.S.**, Momani, S., “He's Variational Iteration Method For Solving Singularly Perturbed Volterra Integral Equations”, *World Applied Sciences Journal*, 22 (11), 1657-1661, 2013.
- **Ertürk, V.S.**, “İkinci mertebeden bir diferensiyel denklem sınıfı için başlangıç değer probleminin diferensiyel dönüşüm yöntemi ile tam çözümleri”, *EÜFBED*, 3(2),199-206, 2010.
- **Ertürk, V.S.**, “The numerical solutions of a second-order differential equation with Neumann Boundary conditions via differential transformation method”, *Anadolu Üniversitesi Bilim ve Teknoloji Dergisi-B-Teorik Bilimler*, 1(1), 19-29, 2011.

- Merdan, M., Gökdoğan, A., **Ertürk, V.S.**, “On solving Couplet system by differential transformation method”, Çankaya University Journal of Science and Engineering, 8(1), 111-121, 2011.
- Karabulut, Z., **Ertürk, V. S.**, “Reproducing Kernel Hilbert Space Method for Solving the Pollution Problem of Lakes”, ICAAM2012, 18-21 October, 2012, Gümüşhane, Turkey.
- Karabulut, Z., **Ertürk, V. S.**, “İnsan vücudundaki kurşun düzeyini belirlemek için kullanılan matematiksel bir modelin sayısal analizi”, 11. Matematik Sempozyumu, 19-21 Eylül, Samsun, 2012.

Courses Taught:

- “Differential Equations” at 19 Mayıs University
- “Computer Programming” at 19 Mayıs University
- “Numerical Analysis” at 19 Mayıs University
- “Fractional Calculus” at 19 Mayıs University

Service Activities:

- Referee for: Applied Mathematics and Computations, Journal of Computational and Applied Mathematics, Computers&Mathematics with Applications, Mathematical and Computational Applications, Communications in Nonlinear Science and Numerical Simulation.