Salih Tatar

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Personal

Born on July 06, 1982, Gaziantep / Türkiye.

Türkiye Citizen.

Youtube Channel : www.youtube.com/@SalihTatarMathProf .

Fenerhabçe and Al-Nasrr Fun .

Education

Ph.D. Mathematics, Kocaeli University, Kocaeli, Türkiye, 2007-2011. *Ph. D. Thesis Title*: An Inverse Coefficient Problem Defined With Monotone Potential Operator for an Elliptic Equation.

M.A. Mathematics, Kocaeli University, Kocaeli, Türkiye, 2004-2007. *M. S. Thesis Title*: Solution of an Inverse Coefficient Problem For a Monotone Operator Related to Elasto-Plastic Torque of A Bar.

B.S. Mathematics, Kocaeli University, Kocaeli, Türkiye, 1999-2004.

Employment

Associate Professor, Alfaisal University, Riyadh, KSA, 2018-to date.

Associate Professor, Zirve University, Gaziantep, Türkiye, 2014–2016.

Assistant Professor, Zirve University, Gaziantep, Türkiye, 2011–2014.

Research Assistant, Kocaeli University, Kocaeli, Türkiye, 2005–2011.

Leadership

Mathematics and Computer Science Department Chair, Alfaisal University, 9.9.2024 to date.

Hiring Committee Chair, Mathematics and Computer Science Department , Alfaisal University, 9.9.2024 to date.

Research Interests

Inverse Problems.

Nonlinear Partial Differential Equations.

Fractional Equations and Their Analysis.

Nonlocal Equations.

Applied Mathematics and Numerical Analysis of PDEs.

Mathematical Problems in Elasticity and Elastoplasticity.

Computational Engineering.

Numerical Methods.

Publications

1. Determining Flux Terms in a Time Fractional Model, Mohamed BenSalah, Salih Tatar, Suleyman Ulusoy, Masahiro Yamamoto, *Applied Mathematical Modelling*, to appear.
2. Simultaneous Identification of the Parameters in the Mathematical Model of Brain Tumor Growth Dynamics Under Treatment, Salih Tatar, Suleyman Ulusoy, Mohamed BenSalah, Maryam Alamil, *European Journal of Pure and Applied Mathematics*, 17 (4) (2024), 2651-2675.
3. Determination of a Nonlinear Coefficient in a Time-Fractional Diffusion Equation, Mustafa Zeki, Ramazan Tinaztepe, Salih Tatar, Suleyman Ulusoy, Rami Al-Hajj, *Fractals Fract*, 7 (5) (2023), 371.
4. An iterative approach for the numerical solution to the time-fractional Richars equation with implicit Neumann boundary conditions , Mustafa Zeki, Salih Tatar, *European Journal of Pure and Applied Mathematics*, 16 (1) (2023), 491-502.
5. An inverse source problem for pseudo-parabolic equation with Caputo derivative , Le Dinh Long, Nguyen Hoang Luc, Salih Tatar, Dumitru Baleanu, Nguyen Huu Can, *Journal of Applied Mathematics and Computing*, 68, 739 (2022), 739 - 765.
6. An inverse problem for an inhomogeneous time-fractional diffusion equation: a regularization method and error estimate, Tuan, N.N, Hoan L.V.C, Salih Tatar, *Comp. Appl. Math.*, (2019) 38 : 32.
7. Recovery of the solute concentration and dispersion flux in an inhomogeneous time fractional diffusion equation, Nguyen Huy Tuan, Tran Bao Ngoc, Salih Tatar, Le Dinh Long, *Journal of Computational and Applied Mathematics*, 342 (2018), 96-118.
8. Tikhonov regularization method for a backward problem for an inhomogeneous time-fractional diffusion equation, Nguyen Huy Tuan, Le Ding Long, Salih Tatar, *Applicable Analysis*, 97 (2018), 842-863.
9. Numerical solutions of direct and inverse problems for a time fractional viscoelastoplastic equation, Salih Tatar, Ramazan Tınaztepe, Mustafa Zeki, *ASCE Journal of Engineering Mechanics*, 143 (2017), 04017035.
10. Analysis of direct and inverse problems for a fractional elastoplasticity equation, Salih Tatar, Süleyman Ulusoy, *Filomat*, 31 (2017), 699-708.

11. An inverse problem for a nonlinear diffusion equation with time-fractional derivative, Salih Tatar, Süleyman Ulusoy, *Journal of Inverse and Ill-posed Problems*, 25 (2017), 185-193.

12. Simultaneous determination of the strain hardening exponent, the shear modulusand the elastic stress limit in an inverse problem, Salih Tatar, Ramazan Tınaztepe, Zahir Muradoğlu, *Applied Mathematical Modeling*, 40 (2016), 6956-6968.

13. Simultaneous inversion for the exponents of the fractional time and space derivatives in the space-time fractional diffusion equation, Salih Tatar, Ramazan Tınaztepe, Süleyman Ulusoy, *Applicable Analysis*, 95 (2016), 1-23.

14. An inverse coefficient problem for a nonlinear reaction diffusion with a nonlinear source, Salih Tatar, Süleyman Ulusoy, *Electronic Journal of Differential Equations*, 245 (2015), 1-10.

15. Structural stability for the Morris-Lecar neuron model, Zhenhai Liu, Salih Tatar, Süleyman Ulusoy, Mustafa Zeki, *Applied Math. Comp.*, 270 (2015), 261-26.

16. An inverse source problem for a one dimensional space-time fractional diffusion equation, Salih Tatar, Süleyman Ulusoy, *Applicable Analysis*, 94 (2015), 2233-2244.

17. Determination of an unknown source term in a space-time fractional diffusion equation, Salih Tatar, Ramazan Tınaztepe, Süleyman Ulusoy, *Journal of Fractional Calculus and Applications (JFCA)*, 6 (2015), 94-101.

18. Numerical solution of the nonlinear evolutional inverse problem related to elastoplastic torsional problem, Salih Tatar, Zahir Muradoğlu, *Applicable Analysis*, 93 (2014), 1187-1200.

19. A modification of the semi-analytic inversion method: Determination of the yield stress and a comparison with the parametrization algorithm, Salih Tatar, Zahir Muradoğlu, *Inverse Problems in Science and Engineering*, 22 (2014), 543-556.

20. Identification of the density dependent coefficient in an inverse reaction- diffusion problem from a single boundary data, Ramazan Tınaztepe, Salih Tatar, Süleyman Ulusoy, *Electronic Journal of Differential Equations*, 21 (2014), 1-14.

21. A uniqueness result in an inverse problem for a space-time fractional diffusion equation, Salih Tatar, Süleyman Ulusoy, *Electronic Journal of Differential Equations*, 258 (2013), 1-9

22. Existence and uniqueness for a nonlinear inverse reaction-diffusion problem with a nonlinear source in higher dimensions, Fahir Talay Akyıldız, Salih Tatar, Süleyman Ulusoy, *Mathematical Methods in the Applied Sciences*, 36 (2013), 2397- 2402.

23. Monotonicity of input-output mapping related to inverse elastoplastic torsional problem, Salih Tatar, *Applied Mathematical Modeling*, 37 (2013), 9552-9561.

24. Quasi-solution approach for a two dimensional nonlinear inverse diffusion problem, Yiliang Liu, Salih Tatar, Süleyman Ulusoy, *Applied Mathematics and Computation*, 219 (2013), 10956-10960.

25. Numerical solution of the nonlinear parabolic problem related to inverse elastoplastic torsional problem, Salih Tatar, *Inverse Problems in Science and Engineering*, 21 (2013), 52-62.

26. Analytical solutions of a class of inverse coefficients problems, Zhenhai Liu, Salih Tatar, *Applied Mathematics Letters*, 25 (2012), 2391-2395.

27. An inversion method for identification of elastoplastic properties of a beam from torsional experiment, Alemdar Hasanov, Salih Tatar, *International Journal of Non- Linear Mechanics*, 45 (2010), 562-571.

28. Semi-analytic inversion method for determination elastoplastic properties power hardening materials from limited torsional experiment, Alemdar Hasanov, Salih Tatar, *Inverse Problems in Science and Engineering*, 18 (2010), 265-278.

29. Solutions of linear and nonlinear problems related to torsional rigidity of a beam, Alemdar Hasanov, Salih Tatar, *Computational Materials Sciences*, 45 (2009), 494- 498.

Submitted Papers

1. Determination of the heat flux in a nonlinear time-fractional diffusion equation, Salih Tatar, Suleyman Ulusoy, Mohamed BenSalah. Masahiro Yamamoto, arXiv:2407.16621.

2. Identification of the initial value for a space-time fractional diffusion equation, Mohamed BenSalah, Salih Tatar, arXiv:2412.05387 .

3. Simultaneous identification of the parameters in the plasticity function for power hardening materials : A Bayesian approach, Mohamed BenSalah, Salih Tatar, arXiv:2412.05241.

4. Bayesian Inference for a Time-Fractional HIV Model with Nonlinear Diffusion, Mohamed BenSalah, Salih Tatar, Suleyman Ulusoy, arXiv:2503.23638 .

Work in Progress

1. Inverse problems on Graphs.

2. Bayesian Inference for inverse source problems.

Research Grants

1. Mathematical analysis and numerical solution of direct and inverse problems for some nonlinear elliptic and parabolic equations, February 2014-February 2016, Project number: 113F373, TUBITAK, Principal Investigator.

2. Solutions of Inverse Problems With Nonlocal Additional Conditions For Linear/Nonlinear Parabolic Equations and Applications to Water Remediation/Pollution and Ion Transfer Problems, October 2009-October 2010, Project number:108T332, TUBITAK, Granted P.h.D. Student.

Talks and Presentations

1. Simultaneous inversion for the exponents of the fractional time and space derivatives in the space-time fractional diffusion equation, The seventh International conference "Inverse problems: Modeling and simulation", Salih Tatar, Ramazan Tınaztepe, Süleyman Ulusoy, 2014.

2. Identifying the unknown coefficient in a nonlinear elliptic probem , “The sixth International conference Inverse problems: Modeling and simulation”, Alemdar Hasanov, Salih Tatar, 2012.

3. The secret of Pi, Pi Day, Zirve University, Salih Tatar, 2011.

4. On Some Olympic Math. Problems, Kocaeli University, Salih Tatar, 2010.

5. An inversion method for identification of elastoplastic properties of a beam from torsional experiment, "The fifth International conference Inverse problems: Modeling and simulation", Alemdar Hasanov, Salih Tatar, 2010.
6. A nonlocal identification problem related to determination of unknown parameters of a cyclindrical bar from measured torque, Salih Tatar, Alemdar Hasanoğlu, The fourth International conference, "Inverse problems: Modeling and simulation", 2008.
7. An inverse problem related to determination of elastoplastic properties of a beam from the torsional rigidity, Salih Tatar, Alemdar Hasanoğlu , ISAAC Congress, 2007.

Conference Organizations

1. International Conference on Global Issues of Early Childhood Education and Children's Rights, April 27-29, 2011, Gaziantep, Session Chair.
2. The Fifth International Conference "Inverse Problems: Modeling and Simulation, May 26-30, 2010, Antalya, International Program Committee.
3. The Fourth International Conference "Inverse Problems: Modeling and Simulation, May 26-30, 2008, Oludeniz-Fethiye, International Program Committee.

Teaching Experience

Courses Taught at Alfaisal University

Spring 2024-2025: Calculus2 , Instructor, (Approx. 280 students).

Fall 2024-2025: Linear Algebra , Instructor, (Approx. 300 students). Linear Algebra for in Saudi Economist Program (Approx. 20 students)

Spring 2023-2024: Calculus2 , Instructor, (Approx. 300 students)

Fall 2023-2024: Calculus2 , Instructor, (Approx. 65 students). Linear Algebra, Instructor, (Approx. 200 students).

Spring 2022-2023: Calculus2 , Instructor, (Approx. 220 students).

Fall 2022-2023: Calculus2 , Instructor, (Approx. 15 students). Linear Algebra, Instructor, (Approx. 200 students).

Summer 2021-2022: Linear Algebra , Instructor, (Approx. 60 students). Differential Equations, Instructor, (Approx. 40 students).

Spring 2021-2022: Calculus2 , Instructor (Approx. 220 students). Linear Algebra, Instructor, (Approx. 20 students).

Fall 2021-2022: Linear Algebra, Instructor, (Approx. 200 students). Calculus2, Instructor, (Approx. 20 students). Precalculus, Instructor (Approx. 50 students).

Spring 2020-2021: Calculus 2, Instructor, (Approx. 180 students).

Fall 2020-2021: Calculus 1, Instructor, (Approx. 108 students). Linear Algebra, Instructor, (Approx. 118 students).

Summer 2019-2020: (Distance Education using Moodle): Linear Algebra, Instructor, (Approx. 35 students). Differential Equations, Instructor, (Approx. 90 students).

Spring 2019-2020: (Distance Education using Moodle): Linear Algebra, Instructor, (Approx. 40 students). Calculus 2, Instructor, (Approx. 140 students). Business Calculus, Instructor, (Approx. 40 students).

Fall 2019-2020: Linear Algebra, Instructor, (Approx. 110 students). Calculus 1, Instructor, (Approx. 100 students).

Spring 2018-2019: Business Calculus, Instructor, (Approx. 50 students). Calculus 2, Instructor, (Approx. 100 students). Linear Algebra, Instructor. (Approx. 40 students).

Fall 2018-2019: Precalculus, Instructor, (Approx. 50 students). Calculus 1, Instructor, (Approx. 120 students).

Spring 2017-2018: Business Calculus, Instructor, (Approx. 50 students). Precalculus, Instructor, (Approx. 40 students).

Courses Taught at Zirve University

Summer 2015-2016: Differential Equations, Instructor. (Approx. 15 students).

Spring 2015-2016: Differential Equations, Instructor. (Approx. 250 students).

Fall 2015-2016: Differential Equations, Instructor. (Approx. 80 students) Hist. of Math, Instructor. (Approx. 50 students).

Spring 2014-2015: Differential Equations, Instructor. (Approx. 300 students).

Fall 2014-2015: Linear Algebra, Instructor. (Approx. 300 students).

Summer 2013-2014: Differential Equations, Instructor. (Approx. 50 students).

Spring 2013-2014: Differential Equations, Instructor. (Approx. 250 students).

Fall 2013-2014: Linear Algebra, Instructor. (Approx. 200 students).

Summer 2012-2013: Differential Equations, Instructor. (Approx. 60 students).

Spring 2012-2013: Differential Equations, Instructor. (Approx. 250 students).

Fall 2012-2013: Linear Algebra, Instructor. (Approx. 200 students) Probability and Statis. (Approx. 50 students).

Spring 2011-2012: Differential Equations, Instructor. (Approx.60 students) Probability and Statis. (Approx. 50 students).

Fall 2011-2012: Linear Algebra, Instructor. (Approx. 60 students) Basic Math. (Approx. 50 students).

Courses Taught at Kocaeli University

Spring 2010-2011: Math. 2, Teaching Assistant, (Approx. 50 students). Math. 3, Teaching Assistant, (Approx. 70 students).

Fall 2010-2011: Partial Differential Equations 1, Teaching Assistant, (Approx. 60 students). Matlab, Teaching Assistant, (Approx. 50 students).

Spring 2009-2010: Partial Differential Equations 2, Teaching Assistant, (Approx. 60 students).

Fall 2009-2010: Partial Differential Equations 1, Teaching Assistant, (Approx. 60 students). Differential Equations 1, Teaching Assistant, (Approx. 50 students).

Spring 2008-2009: Partial Differential Equations 2, Teaching Assistant, (Approx. 60 students). Differential Equations 2, Teaching Assistant, (Approx. 50 students).

References

Zahir Muradoğlu, Professor (PhD Advisor).
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Alemdar Hasanoğlu, Professor (Ms Advisor).
Address: Izmir University, Department of Math., Izmir, Turkey.
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Address: Abdullah Gul University, Kayseri, Turkey.
E-mail: zubeyirc@gmail.com

Serdal Pamuk, Professor.
Address: Kocaeli University, Department of Math., Kocaeli, Turkey.
E-mail: spamuk@kocaeli.edu.tr

Lakhdar Remaki, Professor.
Address: Alfaisal University, Department of Math. and Computer Science, Riyadh, KSA.
E-mail: lremaki@alfaisal.edu

Suleyman Ulusoy, Professor.
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