Khadijeh Nedaiasl

Curriculum Vitae

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Education

Ph.D, *Iran University of Science and Technology (IUST)*, **2009–2013**
Tehran, *Thesis Title:* .
Numerical Solution of Nonlinear Fredholm Integral Equation via Projection Methods

M.Sc, *Iran University of Science and Technology (IUST)*, **2007–2009**
Tehran, *Thesis Title*.
Discrete Galerkin Method for Fredholm Integral Equation

B.Sc, *Bu Ali Sina University*, Hamedan, . **2003–2007**

Employment

Lecturer of Mathematics, *Payam Noor University*, **2010–2011**
Hamedan.

Lecturer of Mathematics, *Iran University of Science and Technology*, Tehran. **2011–2012**

Assitant Professor, *Institute for Advanced Studies in Basic Sciences*, Zanjan. **2013–present**

Research Interests

Numerical Analysis, Numerical Solution of Integral Equation and Fractional Differential Equations:

Honors and Awards

First rank student in MSc and PhD,

Distinguished paper in the 6th Seminar on Numerical Analysis and its Applications, 2016,

Winner of Abel Visiting Program for fully supported sabbatical leave from September to November 2022,

Teaching experinces

at IASBS: Numerical Solution of Integral Equations and Theory of Integral Equations (for master students), Fundamental Theories of Numerical Analysis, Boundary Element Methods (BEM) (for PhD students). Numerical Solution of Partial Differential Equations, Theory of Partial Differential Equations, Variational Method in Partial Differential Equations, Finite Element Methods and Advanced Numerical Method (for master students)

General mathematics, Ordinary Differential Equations and Numerical Analysis (for bachelor students),

at IUST and Payam Noor: Approximation Theory; Applied Linear Algebra; Calculus I and II; Ordinary Differential Equation.

Computer Skills

Programming with: Julia, Python, Mathematica

Familiar with : MATLAB, FreeFEM++, FEniCS, Latex, XePersian

Environments: Windows, Linux.

Referee

list: American Mathematical Society (AMS reviewer); Journal of Integral Equations and Applications (JIEA); Applied Numerical Mathematics (ANM); Computational Methods in Applied Mathematics (CMAM); Applied Mathematics and Computation (AMC); Bulletin of the Iranian Mathematical Society (BIMS); Computational Methods for Differential Equations (CMDE)

Publications

[1] K. Maleknejad and K. Nedaiasl, "Application of sinc-collocation method for solving a class of nonlinear Fredholm integral equations," *Computers & Mathematics with Applications*, vol. 62, no. 8, pp. 3292–3303, 2011.

[2] K. Maleknejad, K. Nedaiasl, and B. Moradi, "Double exponential Sinc Nyström solution of the Urysohn integral equations," in *Proceedings of the World Congress on Engineering*, vol. 1, 2013.

[3] K. Maleknejad and K. Nedaiasl, "A sinc quadrature method for the Urysohn integral equation," *Journal of Integral Equations and Applications*.

[4] K. Maleknejad, K. Nedaiasl, and L. Torkzadeh, "A new discrete collocation method for nonlinear Fredholm integral equations," in *Proceedings of the International Conference on Scientific Computing (CSC)*, p. 1, The Steering Committee of The World Congress in Computer Science, Computer, 2012.

[5] K. Nedaiasl and A. F. Bastani, "On the numerical approximation of some non-standard Volterra integral equations," *Dolomites Research Notes on Approximation*, vol. 10, 2017.

[6] U. Vögeli, K. Nedaiasl, and S. A. Sauter, "A fully discrete galerkin method for Abel-type integral equations," *Advances in Computational Mathematics*, vol. 44, pp. 1601–1626, 2018.

[7] K. Nedaiasl, A. F. Bastani, and A. Rafiee, "A product integration method for the approximation of the early exercise boundary in the American option

pricing problem," *Mathematical Methods in the Applied Sciences*, vol. 42, no. 8, pp. 2825–2841, 2019.

[8] K. Nedaiasl, R. Dehbozorgi, and K. Maleknejad, "hp-version collocation method for a class of nonlinear Volterra integral equations of the first kind," *Applied Numerical Mathematics*, vol. 150, pp. 452–477, 2020.

[9] K. Nedaiasl, "Analysis of sinc projection methods for weakly singular nonlinear integral equations," *arXiv*, vol. 2019, 2019.

[10] K. Nedaiasl and R. Dehbozorghi, "Galerkin finite element method for nonlinear Riemann-Liouville and Caputo fractional differential equations," *arXiv preprint arXiv:1909.08295*, 2019.

[11] R. Dehbozorgi and K. Nedaiasl, "Numerical solution of nonlinear Abel integral equations: An hp-version collocation approach," *arXiv preprint arXiv:2001.06240*, 2020.

[12] R. E. Viand, S. Dortaj, S. E. N. Oskoee, K. Nedaiasl, and M. Sahimi, "Numerical simulation and the universality class of the KPZ equation for curved substrates," *arXiv preprint arXiv:2007.09761*, 2020.

[13] K. Nedaiasl, "Approximation of weakly singular integral equations by sinc projection methods," *arXiv preprint arXiv:1902.08562*, 2019.

[14] R. Dehbozorgi and K. Nedaiasl, "Numerical solution of nonlinear weakly singular Volterra integral equations of the first kind: An hp-version collocation approach," *Applied Numerical Mathematics*, vol. 161, pp. 111–136, 2021.

[15] K. Nedaiasl, "Sinc projection solutions of Fredholm integral equations," in *New Sinc Methods of Numerical Analysis: Festschrift in Honor of Frank Stenger's 80th Birthday*, pp. 35–53, Springer International Publishing Cham, 2020.

[16] M. Costabel, M. Dauge, and K. Nedaiasl, "Stability analysis of a simple discretization method for a class of strongly singular integral equations," *arXiv preprint arXiv:2302.13159*, 2023.

Academic Leadership and Administrative Appointments

1: Member of editorial board in newsletter of Iranian Mathematical Society, 2021-2024

2: Representative of IASBS in IR programs in cooperation with Institute for Research and Planning in Higher Education, 2021-present

3: Member of organizing committee of CIMPA School on Combinatorial Commutative Algebra, IASBS, 2018

4: Member of scientific committee of 14th Seminar on Differential Equations, Dynamical Systems and Applications, IASBS, 2018

5: Member of organizing committee of fourth international conference on nonlinear analysis and optimization, IASBS, 2018

6: Organizer of IASBS Mathematics Colloquium (weekly talks at IASBS, 2014-2017.