دکتر پیام مختاری اقدمی

دانشیار

دانشکده: علوم پایه مهندسی

Publications:

[38] With N. Ayazi, B. Parsa Moghaddam, Efficiently solving fractional delay differential equations of variable order via an adjusted spectral element approach, Chaos, Solitons & Fractals, 181 (2024), 114635.

[37] With R. Kaafi, E. Hesameddini, Operational Jacobi Galerkin method for a class of cordial Volterra integral equations, Numer. Algorithms, 12 October (2023).

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[31] With Y. Talaei, S. Shahmorad and Amin Faghih, A Fractional version of the recurisive Tau method for solving general class of Abel-Volterra integral equations systems, Frac. Calc. Appl. Anal., (2022) 25:1553–1584.

[30] With Amin Faghih, Non-linear system of multi-order fractional differential equations: Theoretical analysis and a robust fractional Galerkin, J. Sci. Comput., (2022) 91:35.

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[28] With Amin Faghih, A new fractional collocation method for a system of multi-order fractional differential equations with variable coefficients. J. Comput. Appl. Math., 383 (2021), 113-139.

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[23] With B. P. Mogaddam, A. M. Lopes, J. A. Tenreiro Machado, A computational approach for the non-smooth solution of nonlinear weakly singular Volterra integral equation with proportional delay, Numer. Algorithms, 83 (2020), no. 3, 987-1006.

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coefficients. Computational methods for differential equations, 3(2015), no. 1, 36-44.

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[20] With N. Ayazi, Solving fractional delay differential equations via spectral element collocation approach, 10th Seminar on Numerical Analysis and its Applications, University of Tabriz, 2024, Iran.

[19] With Z. Saki, A discrete Gauss Legendre-Tau approach for the numerical solution of distributed order fractional differential equations, 10th Seminar on Numerical Analysis and its Applications, University of Tabriz, 2024, Iran.

[18] With E. Hesameddini and R. Kafi, Operational Galerkin method for a class of system of generalized Abel integral equations, 54th Annual Iranian mathematics conference, University of Zanjan, 2023, Iran.

[17] With E. Hesameddini and R. Kafi, Control of condition number in spectral Galerkin implementation for solving generalized Abel integral equation, 12th international seminar on linear algebra and its applications, Sahand university of Technology, 2023, Iran.

[16] With A. Faghih, A robust spectral scheme for non-linear dynamical model of COVID-19 disease, 9th Seminar on Numerical Analysis and its Applications, University of Guilan, 2022, Iran.

[15] With E. Hesameddini and R. Kafi, The Muntz-Galerkin method for numerical solution of the generalized Abel-integral equation, 52th Annual Iranian mathematics conference, University of Shahid Bahonar Kerman, 2021, Iran.

[14] With A. Faghih, A novel fractional Legendre collocation method for a class of non-linear systems of fractional differential equations, 52th Annual Iranian mathematics conference, University of Shahid Bahonar Kerman,

2021, Iran.

[13] With A. Faghih, Numerical solution of Bagley-Torvik equation using fractional Chebyshev collocation method, 8th Seminar on Numerical Analysis and its Applications, University of Kurdistan, 2021, Iran.

[12] With A. Faghih, Spectral Galerkin method using fractional-order Generalized Jacobi functions for solving linear systems of fractional differential equations, 51th Annual Iranian mathematics conference, University of Kashan, 2021, Iran.

[11] With A. Faghih, A well-conditioned spectral approach for a class of systems of single-order fractional differential equations, 50th Annual Iranian mathematics conference, University of Shiraz, 2019, Iran.

[10] With F. Ghanbari and K. Ghanbari, The Muntz-Jacobi collocation method for solving fractional differential algebraic equations, The first international conference on boundary value problems and applications, University of Tabriz, 2018, Iran.

[9] With F. Ghanbari and K. Ghanbari, The Legendre collocation method for nonlinear fractional order integro-differential algebraic equations with smooth solutions, 48th Annual Iranian mathematics conference, University of Bu-Ali sina, 2017, Iran.

[8] With F. Ghanbari and K. Ghanbari, The pseudospectral method for solving fractional differential algebraic equations(FDAE), 6th seminar on numerical analysis, university of Maragheh, 2016, Iran.

[7] With S. Kafili, Piecewise collocation method for the numerical solution of fractional integro-differential equations with weakly singular kernels, 6th seminar on numerical analysis, university of Maragheh, 2016, Iran.

[6] With H. Ansari, Discrete Galerkin method for pantograph type Volterra integral equations, 6th seminar on numerical analysis, university of Maragheh, 2016, Iran.

[5] With S. M. Hosseini, Basic topics in general linear methods with inherent Runge-Kutta stability for ODE's, 40th Annual Iranian mathematics conference, Sharif University of Technology, Iran.

[4] With F. Ghoreishi, Numerical solution of fractional Integro-differential equations by Galerkin method with an error estimation, 40th Annual Iranian mathematics conference, Sharif University of Technology, Iran.

[3] With F. Ghoreishi, Orthogonal Collocation method for fractional Integro-differential equations, 41th Annual Iranian mathematics conference, University of Urmia, Iran.

[2] With F. Ghoreishi, Condition Number Analysis of the Tau method for FIDE's, 42th Annual Iranian mathematics conference, Vli-e-Asr university of Rafsanjan, Iran.

[1] Petrov Galerkin Method for Fredholm Type Fractional Integro-Differential Equations, 12th Seminar on Differential Equations and Dynamical System, University of Tabriz, Iran.

Research Opportunity:

[1] R. Kaafi, Shiraz university of Technology, 2022.

Ph. D. **Students:**

[1] F. Ghanbari, (Joint with Prof. K. Ghanbari), Garduated, February 2019.

[2] H. Rezapour, (Joint with Dr. H. Zahed), Graduated, 2019,

[3] Y. Talaei, (Joint with Prof. S. Shahmorad), Graduated, 2020,

[4] A. Faghih, Graduated, 2021,

[5] F. Gholami, (Joint with Prof. M. Lakestani), Graduated, 2023.

[6] N. Ayazi, In Progress,

[7] Z. Saki, In Progress,

[8] S. Ekhraji, In Progress,

[9] Sh. Pasban Hagh, In Progress

[10] S. Kaafi, (Joint with Prof. E.Hesameddini), Graduated, 2024.

[11] H. Azadfar, (Joint with Dr. M. Hajipour), In Progress

[12] M. Kazemian, (Joint with Dr. M. Hajipour), In Progress

M. S. **Students:**

[1] M. Gholipour, Convergence analysis of spectral Galerkin method for numerical solution of high-order differential equations, September 2015. (Supervisor)

[2] S. Kafili, Piecewise collocation methods for fractional integro-differential equations with weakly singular kernels, September 2016. (Supervisor)

[3] H. Ansari, Spectral methods for pantograph-type differential and integral equations, September 2016. (Supervisor)

[4] Z. Keramati, Convergence analysis of spectral and pseudo-spectral Galerkin methods for Volterra type integral equations, September 2016. (Supervisor)

[5] N. Ayazi, Fractional Sturm-Liouville equations and their applications, July 2018. (Supervisor)

[6] Z. Shahbazi, A multi-domain spectral method for fractional differential equations, January 2019. (Supervisor)

[7] M. Fattahi, High-order nonstandard finite difference schemes for a MSEIR model for a malware propagation, September 2019. (Advisor)

[8] L. Rahimzadeh, Pseudospectral methods for solving optimal control problems on unbounded domains, January2019, (Advisor)

[9] M. Parvizi, Fractional Laguerre polynomials and their applications, January2020, (Advisor)

[10] Kh. Sadeghi Bonab, Regularity analysis of solutions of various linear Volterra functional equations, March2021. (Supervisor)

[11] Sh. Razmavari, Fractional Gauss quadrature and its application in fractional variational problems, September 2021. (Supervisor).

[12] B. Narimani, Theory of nonlinear Volterra integral equations, September 2021. (Supervisor).

[13] M. Jodat, Solving Fredholm integral equations of the first kind using Muntz wavelets. February 2023. (Supervisor).

[14] Sh. Fuman, Spectral approximations to the fractional order integral and derivative. September 2023. (Supervisor).

Teaching Experience:

-Spectral Methods (Graduate Level)

- Approximation Theory (Graduate Level)

- Numerical Solution of Ordinary differential Equations (Graduate Level)

- Fractional Differential Equations (Graduate Level)

- Numerical Solution of Integral Equations (Graduate Level)

- Numerical Methods in Linear Algebra (Graduate Level)

- Advanced Numerical Analysis (Graduate Level)

- Mathematics Laboratory (Graduate Level)

- Advance Engineering Mathematics (Graduate and Under Graduate Levels)

- Differential Equations, Calculus 1, calculus 2, Numerical Computations(Under Graduate Level)

Reviewer of the Journals:

Applied Numerical Mathematics, Journal of Computational and Applied Mathematics, Numerical Algorithms, Applied Mathematical Modelling, Computational and Applied Mathematics, Mathematical Modelling and Analysis, Applied Mathematics and Computation, International Journal of Computer Mathematics, Mathscinet, Journal of Mathematical Extension, Iranian Journal of Science and Technology(Scieneces). Bulletin of Iranian Mathematical Society, Mathematical Methods in the Applied Sciences. Electronic Transactions on Numerical Analysis (ETNA), Fractional Calculus and Applied Analysis (FCAA).

Awards and achievements:

- Distinguished researcher award of the faculty of basic sciences, SUT, Tabriz, Iran, 2016, 2023.

Memberships:

- Iranian Mathematical Society.

سوابق تحصیلی

مقطع تحصیلی	سال اخذ مدرک	رشته و گرایش تحصیلی	دانشگاه
کارشناسی	۱۳۸۴	ریاضی محض	دانشگاه ارومیه
کارشناسی ارشد	۱۳۸۷	ریاضی کاربردی - آنالیز عددی	دانشگاه تربیت مدرس
دکترای تخصصی	۱۳۹۲	ریاضی کاربردی - آنالیز عددی	دانشگاه خواجه نصیرالدین طوسی

سوابق اجرایی

نماینده دانشکده علوم پایه در دانشکده آموزش های الکترونیکی، آموزشهای آزاد و پردیس دانشگاه 1394-1398

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مدیر اداره تحصیلات تکمیلی دانشگاه 1403 تاکنون

جوایز و تقدیر نامه ها

پژوهشگر برتر دانشکده علوم پایه در سالهای 2016 و 2023

موضوعات تدریس تخصصی

تحلیل عددی معادلات دیفرانسیل کسری - تحلیل عددی معادلات انتگرالی - روشهای طیفی

فعالیت های علمی و اجرایی

نماینده انجمن ریاضی ایران در دانشگاه صنعتی سهند1394-1397

مقالات در همایش ها

۱. P. Mokhtary و A. Faghih،A well-conditioned spectral approach for a class of systems of single-order fractional differential equations،۵۰th Annual Iranian mathematics conference،University of Shiraz, Iran،۲۰۱۹.

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.Zanjan, Iran ,2023

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29. P. Mokhtary ,& M. Gholipour,Discrete Galerkin method for higher even-order integro-differential equations with variable coefficients,Computational methods for differential equations,2015.
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پایان‌نامه‌ها

۱. تحلیل هموار‌ی جوابهای انواع معادلات تابعی ولترای خطی
۲. حل عددی رده ای از دستگاه معادلات انتگرال آبل-ولترا خطی تعمیم یافته با روش تاو بازگشتی
۳. چند جمل های های مانتس-لژاندر و کاربردهای آن ها در حل عددی معادلات انتگرال تعمیم یافته آبل
۴. رفع همزمان نویز و تاری تصویر با استفاده از حسابان کسری

۵. تحلیل عددی برخی روشهای طیفی مرتبه بالا برای حل رده ای از دستگاه معادلات دیفرانسیل کسری
۶. تحلیل عددی معادلات دیفرانسیل جبری کسری با استفاده از روشهای طیفی
۷. تقریب طیفی انتگرال و مشتق از مرتبه کسری
۸. حل عددی معادلات انتگرالی فردهلم نوع اول با استفاده از موجک های مونتز لژاندر
۹. نظریه معادلات انتگرال ولترای غیرخطی
۱۰. کوادراتورهای گاوسی کسری و استفاده از آنها در مسائل تغییراتی کسری
۱۱. تحلیل خطای روش گالرکین در حل عددی معادلات دیفرانسیل با مراتب بالا
۱۲. چند جمله ایهای لاگرکسری و کاربردهای آن
۱۳. روش های فاضلات متناهی غیر استاندارد مرتبه بالا برای تحلیل دینامیکی یک سیستم اپیدمیولوژیکی
۱۴. روش های شبه طیفی برای حل مسائل کنترل بهینه با افق نامتناهی
۱۵. یک روش طیفی چند دامنه ای برای حل معادلات دیفرانسیل مرتبه کسری
۱۶. معادلات اشتورم-لیوویل کسری و کاربردهای آن
۱۷. تحلیل همگرایی روش های طیفی و شبه طیفی گالرکین برای معادلات انتگرالی ولترا
۱۸. روش های طیفی برای حل عددی معادلات دیفرانسیلی و انتگرالی از نوع پانتوگراف
۱۹. روش هم محلی تکه ای برای حل عددی معادلات انتگرالی-دیفرانسیلی از مرتبه کسری با هسته های بطور ضعیف تکین