

Curriculum Vitae



Hassan Majidian

Assistant Professor

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Education

- 2010, PhD in Numerical Analysis, Tarbiat Modares University, Tehran, Iran, thesis title:
- 2002, MSc in Numerical Analysis, Amirkabirs University of Technology, Tehran, Iran, thesis title:
- 1999, BSc in Applied Mathematics, Guilan University, Rasht, Iran.

Research Interests

- Theory and Numeric for High Frequency Scattering
- Oscillatory Integrals
- Integral Equations and Eigenvalue Problems with Kernel Operators

Peer-reviewed Journal Papers

1. H. Majidian and E. Babolian, *An interpolation degenerate kernel method for eigenvalue problems of a class of non-compact operators*, Appl. Math. Lett. **23(8)**: 825-830, 2010.
2. H. Majidian and E. Babolian, *A Nyström method for the eigenvalue problem of a class of noncompact operators*, Numer. Funct. Anal. Optimiz. **31(6)**: 728-737, 2010.

3. H. Majidian, *Numerical approximation of highly oscillatory integrals on semi-finite intervals by steepest descent method*, Numer. Algor. **63(3)**: 537-548, 2013.
4. H. Majidian, *Modified Euler's method with a graded mesh for a class of Volterra integral equations with weakly singular kernel*, Numer. Algor. **67(2)**: 405-422, 2014.
5. H. Majidian, *Composite quadrature rules for a class of weakly singular Volterra integral equations with noncompact kernels*, Appl. Numer. Math. **83**: 1-14, 2014.
6. H. Majidian, *On the existence of orthogonal polynomials for oscillatory weights on a bounded interval*, J. Math. Anal. Appl. **427(1)**: 229-234, 2015.
7. H. Majidian, *Creating stable quadrature rules with preassigned points by interpolation*, Calcolo **63(2)**: 217-226, 2016.
8. H. Majidian, *On the decay rate of Chebyshev coefficients*, Appl. Numer. Math. **113**: 44-53, 2017.
9. H. Majidian, *Filon–Clenshaw–Curtis formulas for highly oscillatory integrals in the presence of stationary points*, Appl. Numer. Math. **117**: 87-102, 2017.
10. H. Majidian, *Efficient quadrature rules for a class of cordial Volterra integral equations: A comparative study*, Bull. Iranian. Math. Soc. **43(5)**: 1245-1258, 2017.
11. H. Majidian, *Automatic computing of oscillatory integrals*, Numer. Algor. **77(3)**: 867-884, 2018.
12. H. Majidian, *Stable application of Filon-Clenshaw-Curtis rules to singular oscillatory integrals by exponential transformations*, BIT Numer. Math. **59(1)**: 155-181, 2019.
13. H. Majidian, *Modified Filon-Clenshaw-Curtis rules for oscillatory integrals with a nonlinear oscillator*, Electron. Trans. Numer. Anal. **54(1)**: 276-295, 2021.
14. H. Majidian, *Efficient computation of oscillatory integrals by exponential transformations*, BIT Numer. Math. **61**: 1337-1365, 2021.
15. H. Majidian, M. Firouzi, and A. Alipanah, *On the stability of Filon-Clenshaw-Curtis rules*, Bull. Iranian. Math. Soc., In press.
16. H. Majidian, *Efficient construction of FCC+ rules*, J. Comput. Appl. Math. **417**: 114592, 2023.

Papers Published in Proceedings of Conferences and Seminars

1. H. Majidian and E. Babolian, *Classification of self-adjoint Sturm-Liouville problems*, Proceeding of the First Territorial Conference of Mathematics and its Results, pp. 677-683, Islamic Azad University of Rasht, 2008.

2. H. Majidian and E. Babolian, *Nyström methods for eigenvalue problems of a class of non-compact operators*, Proceeding of the 18th Seminar on Mathematical Analysis and its Applications, pp. 162-165, Tarbiat Moallem University (Karaj), 2009.
3. H. Majidian and E. Babolian, *A degenerate kernel method for eigenvalue problem of non-compact operators with applications in electromagnetic waveguide*, Proceeding of the 40th Annual Iranian Mathematics Conference, pp. 513-515, Sharif University of Technology, 2009.
4. H. Majidian and E. Babolian, *Refinement by iteration for approximated eigenvalues of bounded operators on a Banach space*, Proceeding of the 41st Annual Iranian Mathematics Conference, pp. 166-168, University of Urmia, 2010.
5. H. Majidian, *Modified Euler method with graded mesh for a class of weakly singular Volterra integral equations*, Proceeding of the 19th Seminar on Mathematical Analysis and its Applications, pp. 257-259, University of Mazandaran, 2011.
6. H. Majidian, *Highly accurate generalized Gaussian quadrature rules for singular and nearly singular integrals*, Proceeding of the 42nd Annual Iranian Mathematics Conference, pp. 1503-1505, Vali-e-Asr University of Rafsanjan, 2011.
7. H. Majidian, *Numerical methods for highly oscillatory integrals on semi-finite intervals*, Proceeding of the 4th International Conference on Mathematical Sciences, pp. 423-427, United Arab Emirates University, 2012.
8. H. Majidian, *Numerical methods for spectral computation of bounded operators: review and open problems*, Proceeding of the 20th Seminar on Mathematical Analysis and its Applications, pp. 236-239, University of Maragheh, 2012.
9. H. Majidian, *Highly accurate numerical methods for weakly singular Volterra integral equations with noncompact kernels*, Proceeding of the 9th Seminar on Differential Equations and Dynamical Systems, pp. 189-191, Azarbaijan Shahid Madani University, 2012.
10. H. Majidian, *Highly oscillatory integrals of a general class: A review of most recent numerical methods*, Proceeding of the 43rd Annual Iranian Mathematics Conference, pp. 670-673, University of Tabriz, 2012.
11. H. Majidian, *Fully moment free Filon method for highly oscillatory integrals*, Proceeding of the 4th Conference on Numerical Analysis and Its Applications, pp. 103-106, Khansar Faculty of Mathematics and Computer, 2013.
12. H. Majidian, *Filon-Clenshaw-Curtis rules for highly oscillatory integrals*, Proceeding of the 44th Annual Iranian Mathematics Conference, pp. 1107-1110, Ferdowsi University of Mashhad, 2013.

13. H. Majidian, *Compound quadrature rules for weakly singular integrals*, Proceeding of the 5th Iranian Conference on Applied Mathematics, pp. 669-671, Bu-Ali Sina University, 2013.
14. H. Majidian, *On the numerical methods with optimal rates of convergence for cordial Volterra integral equations of a specific class*, Proceeding of the 45th Annual Iranian Mathematics Conference, pp. 575-577, University of Semnan, 2014.
15. H. Majidian, *Automatic integration of highly oscillatory functions*, Proceeding of the 5th Conference on Numerical Analysis and Its Applications, pp. 116-119, Vali-e-Asr University of Rafsanjan, 2014.
16. H. Majidian, *Numerical differentiation: A challenging problem*, Proceeding of the 47th Annual Iranian Mathematics Conference, pp. 461-464, Kharizmi University, 2016.
17. H. Majidian, *Modified Filon-Clenshaw-Curtis rules for regular oscillatory integrals*, Proceeding of the 8th Conference on Numerical Analysis and Its Applications, pp. 174-179, University of Kurdistan, 2021.
18. H. Majidian, *On adaptive extended Filon-Clenshaw-Curtis rules*, Proceeding of the 52th Annual Iranian Mathematics Conference, pp. 37-39, Shahid Bahonar University of Kerman, 2021.

Invited Talks

- *Efficient computation of highly oscillatory integrals: The state-of-the-art*, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran, January 6, 2015.
- *Filon-Clenshaw-Curtis rules and their improvements for computing oscillatory integrals*, 4th International Conference of Natural Sciences (ICNS 2019)-Mathematics & Computer, University of Kurdistan, Sanandaj, Iran, April 18-19, 2019.