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Personal Information:

Name : Mohamed Abdelkawy Abdelhalim Mohamed
Date of birth : Dec. 16, 1982
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Current address : Department of Mathematics and Computer Science,
Faculty of Science, Beni-Suef University, Beni-Suef,
Egypt.



Educations:

- **Ph.D. Degree** in Pure Mathematics (Numerical Analysis and Approximation Theory), Department of Mathematics and Computer Science, Faculty of Science, Beni-Suef University, Egypt, Sept. 2014.
- **M.Sc. Degree** in Applied Mathematics, Department of Mathematics, Faculty of Science, Beni-Suef University, Egypt, July 2011.
- **B.Sc. Degree**, Department of Mathematics, Faculty of Science (Beni-Suef), Cairo University, Egypt, May 2003 Grade: "Excellent with Honor".

Employment:

- **Lecturer:** Department of Mathematics, Faculty of Science, Beni-Suef University, Egypt. October 2014.
- **Assistant Lecturer:** Department of Mathematics, Faculty of Science, Beni-Suef University, Egypt. July 2011- September 2014.
- **Demonstrator:** Department of Mathematics, Faculty of Science, Beni-Suef University, Egypt. September 2005– July 2011.
- **Demonstrator:** Department of Mathematics, Faculty of Science, Beni-Suef Branch, Cairo University, Egypt. April 2004 - September 2005.

Main Research Interests:

- Numerical analysis and scientific computing.
- Spectral methods and their applications.
- Developing spectral methods for solving ordinary/partial functional differential equations.
- Nonlinear partial differential equations.
- Functional differential equations.
- Fractional Differential Equations.
- Variable order fractional differential equations.
- Integral equations.

- Fractional integral equations.
- Fractional integro-differential equations.
- Variable order fractional integro-differential equations.
- Distributed order fractional differential equations.
- Complex partial differential equations.
- Error and convergence analysis.
- Orthogonal polynomials.
- Exact solutions of nonlinear partial differential equations that describe nonlinear phenomena appear in many scientific and engineering fields.

Recent Publications:

• Papers published or to be published in refereed journals:

1. A.H. Bhrawy, **M. A. Abdelkawy**, Fouad Mallawi, An Accurate Chebyshev pseudospectral scheme for multi-dimensional parabolic problems with time delays, *Boundary Value Problems*, 2015 doi: 10.1186/s13661-015-0364-y (2015).
Citation index: 0 Impact Factor: 0.836 ISSN:1687 -2770
2. R.M. Hafez, **M.A. Abdelkawy**, E.H. Doha, A.H. Bhrawy, A new collocation scheme for solving hyperbolic equations of second order in a semi-infinite domain, *Rom Rep Phys*, Accepted
Citation index: Impact Factor: 1.137 ISSN:1221 -1451
3. A.H. Bhrawy, E.H. Doha, S.S. Ezz-Eldien, **M.A. Abdelkawy**, A Jacobi spectral collocation scheme based on operational matrix for time-fractional modified Korteweg-de Vries equations, *Computer Modeling in Engineering & Sciences*, CMES201408093121.
Citation index: 0 Impact Factor: 1.183 ISSN:1526 -1492
4. AH Bhrawy, **M. A. Abdelkawy**, A fully spectral collocation approximation for multi-dimensional fractional Schrodinger equations, *J. Comput. Phys.* 294 (2015) 462–483.
Citation index: 5 Impact Factor: 2.485 ISSN:0021 -9991
5. E. H Doha, A H Bhrawy, **M A. Abdelkawy**, An accurate Jacobi pseudo-spectral algorithm for parabolic partial differential equations with non-local boundary conditions, *J. Comput. Nonlin. Dyn.* 10 (2015) 021016-13.
Citation index: Impact Factor: 1.53 ISSN:1555 -1423
6. A.H. Bhrawy, T.M. Taha, **M. A. Abdelkawy**, R.M. Hafez, On numerical methods for fractional differential equation on a semi-infinite interval, A Book chapter.
Citation index: Impact Factor: ISSN:
7. A.H. Bhrawy, M.A. Zaky, D. Baleanu, **M.A. Abdelkawy**, A novel spectral approximation for the two-dimensional fractional sub-diffusion problems, *Rom. Rep. Phys.*, 60 (2015) 344–359.
Citation index: 0 Impact Factor: 1.137 ISSN:1221 -1451
8. **M.A. Abdelkawy**, M.A. Zaky, A.H. Bhrawy, D. Baleanu, Numerical simulation of time variable fractional order mobile-immobile advection-dispersion model, *Rom. Rep. Phys.*, (2015) In Press.
Citation index: 0 Impact Factor: 1.137 ISSN:1221 -1451
9. A.H. Bhrawy, E.H. Doha, **M.A. Abdelkawy**, R.M. Hafez, An efficient collocation algorithm for multidimensional wave type equations with nonlocal conservation conditions, *Appl. Math. Model.*, **39** (18) (2015) 5616–5635.
Citation index: 1 Impact Factor:2.158 ISSN: 0307-904X
10. **M. A. Abdelkawy**, Engy A. Ahmed and P. Sanchez, A method based on Legendre pseudo-spectral approximations for solving inverse problems of parabolic types equations, *Math. Sci. Lett.*, **4** (2015) 81-90.
Citation index: Impact Factor: ISSN:
11. A.H. Bhrawy, E.H. Doha, S.S. Ezz-Eldien, **M.A. Abdelkawy**, A numerical technique based on the shifted Legendre polynomials for solving the time-fractional coupled KdV equation, *Calcolo*

Citation index: 4 Impact Factor: 0.71 ISSN:0008 -0624

12. A.H. Bhrawy, **M.A. Abdelkawy**, A.A. Alzahrani, D. Baleanu, E.O. Alzahrani, A Chebyshev-Laguerre Gauss-Radau collocation scheme for solving time fractional sub-diffusion equation on a semi-infinite domain, Proceedings of The Romanian Academy, Series A, (2015) Accepted.

Citation index: Impact Factor: 1.115 ISSN:1454 -9069

13. A.H. Bhrawy, E.H. Doha, D. Baleanu, S.S. Ezz-Eldien, **M.A. Abdelkawy**, An accurate numerical technique for solving fractional optimal control problems, Proceedings of The Romanian Academy, Series A, 16 (2015) 47–54.

Citation index: 5 Impact Factor: 1.115 ISSN:1454 -9069

14. E. H Doha, A. H. Bhrawy, **M. A. Abdelkawy**, R. M. Hafez, Numerical solution of initially-boundary system of nonlinear hyperbolic equations, Indian Journal of Pure and Applied Mathematics, (2015) Accepted.

Citation index: Impact Factor:0.206 ISSN: 0019-5588

15. **M. A. Abdelkawy**, S. S. Ezz-Eldien, A. Z. M. Amin, A Jacobi Spectral Collocation Scheme for Solving Abel's Integral Equations, Progress in Fractional Differentiation and Applications, 1(3) (2015) 187-200.

Citation index: Impact Factor: ISSN:

16. E. H. Doha, A. H. Bhrawy, **M. A. Abdelkawy**, A shifted Jacobi collocation algorithm for wave type equations with non-local conservation conditions, Central European Journal of Physics, 12 (2014) 637-653.

Citation index:0 Impact Factor:1.077 ISSN: 1895-1082

17. E. H Doha, A H Bhrawy, **M A Abdelkawy**, R. A. Van Gorder, Jacobi-Gauss-Lobatto collocation method for the numerical solution of 1+1 nonlinear Schrödinger equations, J. Comput. Phys., 261 (2014) 244–255.

Citation index: 21 Impact Factor: 2.485 ISSN:0021 -9991

18. A. Biswas, A. H. Bhrawy, **M. A. Abdelkawy**, A. A. Alshaery, E. M. Hilal, Symbolic computation of some nonlinear fractional differential equations, Romanian Journal of Physics 59 (2013) 433-442.

Citation index: 8 Impact Factor: 0.745 ISSN: 1221-146X

19. E.H. Doha, A.H. Bhrawy D. Baleanu, **M.A. Abdelkawy**, Numerical treatment of Coupled Nonlinear Hyperbolic Klein-Gordon Equations, Romanian Journal of Physics, 59 (2014) 247–264

Citation index: 13 Impact Factor: 0.745 ISSN: 1221-146X

20. A. H. Bhrawy, **M. A. Abdelkawy**, A. A. Alshaery, E. M. Hilal, Anjan Biswas, Solitons, cnoidal waves, snoidal waves and other solutions to Whitham-Broer-Kaup system, Applied Mathematics & Information, 8 (2014) 2119-2128 .

Citation index: 1 Impact Factor: 1.232 ISSN:2325 -0399

21. E.H. Doha, A.H. Bhrawy, **M.A. Abdelkawy**, R.M. Hafez, A Jacobi collocation approximation for nonlinear coupled viscous Burgers' equation, Central European Journal of Physics, 12 (2014) 111-122.

Citation index: 6 Impact Factor:1.077 ISSN: 1895-1082

22. E.H. Doha, A.H. Bhrawy, D. Baleanu, and **M.A. Abdelkawy**, An accurate Legendre collocation scheme for coupled hyperbolic equations with variable coefficients. Romanian Journal of Physics 59 (2014) 247-264.

Citation index: 6 Impact Factor: 0.745 ISSN: 1221-146X

23. A. H. Bhrawy, **M. A. Abdelkawy** and Anjan Biswas, Optical solitons in (1+1) and (2+1) dimensions, *Optik*, 125 (2014) 1537–1549.

Citation index: 4 Impact Factor:0.769 ISSN:4026–0030

24. **M. A. Abdelkawy** and T.M. Taha, An operational matrix of fractional derivatives of Laguerre polynomials, Walailak J Sci & Tech 11(12) (2014) 1041-1055.

Citation index: 1 Impact Factor: ISSN:3933–1686

25. E. H. Doha, A. H. Bhrawy, R.M. Hafez and **M. A. Abdelkawy**, A Chebyshev-Gauss-Radau scheme for nonlinear hyperbolic system of first order, *Applied Mathematics & Information Sciences*, **8** (2014) 535-544.
Citation index: 16 **Impact Factor: 1.232** **ISSN:2325 -0399**
26. E. H. Doha, D. Băleanu, A. H. Bhrawy, and **M. A. Abdelkawy**, A Jacobi collocation method for solving nonlinear Burgers'-type equations , *Abstract and applied analysis* **2013**, ID 760542, 12 pp. (2013).
Citation index: 4 **Impact Factor: 1.274** **ISSN:1085 -3375**
27. A. H. Bhrawy, **M. A. Abdelkawy**, Anjan Biswas, Topological solitons and cnoidal waves to a few nonlinear wave equations in theoretical physics, *Indian Journal of Physics*, **87** (2013) 1125-1131
Citation index: 5 **Impact Factor: 1.337** **ISSN:0973 -1458**
28. A. H. Bhrawy, **M. A. Abdelkawy**, Computational study of some nonlinear shallow water equations, *Central European Journal of Physics*, **11** (2013) 518-525.
Citation index: 6 **Impact Factor:1.077** **ISSN: 1895-1082**
29. A.H. Bhrawy and **M. A. Abdelkawy**, Integrable system modeling shallow water waves: Kaup-Boussinesq shallow water system, *Indian Journal of Physics*, **87** (2013) 665-671.
Citation index: 8 **Impact Factor: 1.337** **ISSN:0973 -1458**
30. A.H. Khater, D.K. Callebaut, A.H. Bhrawy and **M.A. Abdelkawy**, Nonlinear periodic solutions for isothermal magnetostatic atmospheres, *Journal of Computational and Applied Mathematics*, **242** (2013) 28–40.
Citation index: 5 **Impact Factor:1.077** **ISSN:037 -0427**
31. A. H. Bhrawy, **M. A. Abdelkawy** and A. Biswas, Cnoidal and snoidal wave solutions to coupled nonlinear wave equations by the extended Jacobi's elliptic function method, *Communications in Nonlinear Science and Numerical Simulation*, **18** (2013) 915–925.
Citation index: 17 **Impact Factor: 2.866** **ISSN:1007 -5704**
32. **M. A. Abdelkawy** and A.H. Bhrawy, G'/G-expansion method for two-dimensional force-free magnetic fields described by some nonlinear equations, *Indian Journal of Physics*, **87** (2013) 555-565
Citation index: 8 **Impact Factor: 1.337** **ISSN:0973 -1458**
33. A. H. Bhrawy, **M. A. Abdelkawy**, Sachin Kumar, Stephen Johnson, Anjan Biswas, Solitons and other solutions to quantum Zakharov-Kuznetsov equation in quantum magneto-plasmas, *Indian Journal of Physics*, 2013, **87**, 455-463.
Citation index: 18 **Impact Factor: 1.337** **ISSN:0973 -1458**
34. A.H. Bhrawy, K. Boubaker and **M.A. Abdelkawy**, Extended F-expansion method for (2+1)-dimensional B-type Kadomtsev-Petviashvili equation, *Physical Chemistry: An Indian Journal*, **8** (2013) 8-16.
Citation index: **Impact Factor:** **ISSN:0974 -7524**
35. A.H. Bhrawy, A. Yildirim, M. M. Tharwat and **M. A. Abdelkawy**, A Jacobi elliptic function method for nonlinear arrays of vortices, *Indian Journal of Physics*, **86** (2012) 1107-1113.
Citation index: 13 **Impact Factor: 1.337** **ISSN:0973 -1458**
36. Ali H. Bhrawy, M. Sh. Alhuthali and **Mohammed A. Abdelkawy**, New solutions for (1+1)-dimensional and (2+1)-dimensional Ito equations, *Mathematical Problems in Engineering*, **2012**, Article ID 537930, pp. 24 (2012).
Citation index: 4 **Impact Factor:1.082** **ISSN: 1024-123X**
37. A. S. Alofi and **M.A. Abdelkawy**, Jacobi elliptic function expansion method for Zakharov-Kuznetsov (ZK) equations and Kadomtsov-Petvshvili (KP) equations, *ISST journal of applied physics*, **3** (2012) 31-38.
Citation index: **Impact Factor:** **ISSN: 0976 – 903X**
38. A.H. Bhrawy, A.S. Alofi, **M.A. Abdelkawy**, Time-dependent two-dimensional Zakharov-Kuznetsov equation in the electron-positron-ion plasmas. *Life Science Journal*, **9** (2012) 1804-1813
Citation index: 1 **Impact Factor: 0.165** **ISSN:1097 -8135**

39. **M. A. Abdelkawy**, M. A. Alghamdi and A.H. Bhrawy, Jacobi doubly periodic wave solutions for three versions of Benjamin-Bona- Mahony equation, *Scientific Research and Essays*, **7** (2012) 2417-2423.

Citation index: **Impact Factor:** **ISSN:2248-1992**

40. A.H. Bhrawy, **M. A. Abdelkawy**, S. Kumar and A. Biswas, Solitons and other solutions to Kadomtsev-Petviashvili equation of B-type, *Romanian Journal of Physics*, **58**, (2013) 729-748

Citation index: 17 **Impact Factor: 0.745** **ISSN: 1221-146X**

41. A.S. Alofi and **M.A. Abdelkawy**, New exact solutions of Boiti-Leon-Manna-Pempinelli equation using extended F-expansion method, *Life Science Journal*, **9** (2012).

Citation index: 3 **Impact Factor: 0.165** **ISSN:1097 -8135**

42. A. H. Khater, D. K. Callebaut and **M. A. Abdelkawy**, Two-dimensional force-free magnetic fields described by some nonlinear equations, *Phys. of plasmas*, **17** (2010) 122902.

Citation index: 9 **Impact Factor:2.249** **ISSN: 1070-664X**

Reviewer for the following Journals:

- Abstract and Applied Analysis.
- Journal of Optoelectronics and Advanced Materials.
- Applications and Applied Mathematics.
- Advances in Difference Equations.

Conferences and Workshops Participation:

- International Association of Geomagnetism and Aeronomy (IAGA) 2nd Symposium Cairo, Egypt, 4th-8th December (2009).
- International Congress on Computational and Applied Mathematics, Leuven, Belgium 5th-9th July (2010).

Organization

- A member of the Egyptian Mathematical Society.

Co-Supervisor of the following thesis

- Z. M. Amin, M.Sc. Jan. 2015, thesis entitled: "Spectral methods for solving fractional integral equations".
- T. M. Taha, Ph.D Jul. 2015, thesis entitled: "".

Citation Overview

- According to the database of Scopus, the number of Citations is about 312 with 10 h-index.
- According to Google Search Scholar, the number of Citations is about 178 with 8 h-index.

Awarded Projects

- **Project entitled** "A new spectral method for solving a two-dimensional fractional diffusion equation" funded by faculty of science, Beni-Suef University.

Awarded prize

- The prize of the best Ph.D. thesis for 2014 awarded from faculty of science, Beni-Suef University.

Skills:

★ **Teaching Experiences:**

1- Courses for undergraduates:

I have experience in teaching courses in numerical analysis, special functions and orthogonal polynomials, differential equations, precalculus, calculus, advanced calculus, analytical geometry, linear algebra, introduction to computer, mathematical statistics, theory of probability, mechanics (statics and dynamics), in Faculty of Science, Faculty of Education, Faculty of Engineering and Faculty of Pharmacy, Beni-Suef University.

★ **Computer science Experiences:**

1. I have programming skills in MATHEMATICA.
2. I have experience in teaching course in numerical analysis using MATHEMATICA.

---- Dr. M. A. Abdelkawy ----