ZAKIR HUSAIN DELHI COLLEGE
(University of Delhi)

Faculty Details

(Please Fill the form and Email it to website@zh.du.ac.in)

Title	First Name	Last Name	Photograph
Dr.	Abdullah		
Designation	Associate Professor		
Address	A-72/2, Shaheen Bagh, New Delhi 110025		
Phone Number	Office		
	Residence		
	Mobile	9811739965	
Email Id	abd.zhc.du@gmail.com		
Web Page	https://sites.google.com/view/abdullahzhdc/home		

Educational Qualification

Degree	Institution	Year
M.Sc. (Maths with Comp. Sc.)	Jamia Millia Islamia, New Delhi-25	**2001**
Ph.D.	Jamia Millia Islamia, New Delhi-25	2007

Career Profile

Administrative Assignments

Areas of Interest / Specialization

Wavelet Analysis and Numerical Analysis

Subjects Taught

Real Analysis, Calculus, Complex Analysis, Metric Space, Analytical Geometry of Two Dimensions and Three Dimensions, Numerical Analysis and Linear Algebra.

Research Guidance

Mohd Rafiq (2017-2023), University of Delhi, Enrollment No. ZH-1064/10
Thesis Title: Numerical Investigation of certain Nonlinear Schrödinger Equation using Wavelet Methods

Publications Profile

1. Mohd Rafiq and **A. Abdullah**, Fibonacci wavelets collocation method for the numerical solution of the modified unstable nonlinear Schrödinger equation, Int. J. Appl. Comput. Math.
   DOI: https://doi.org/10.1007/s40819-023-01598-0 [October, 2023].

2. Afroz, Basharat Hussain and **Abdullah**, An efficient Haar wavelet series method to solve higher-order multi-pantograph equations arising in electrodynamics, Jordan J Math and Stat, 15(4A), 2022, pp 787 - 805.
   DOI: https://doi.org/10.47013/15.4.1 [December, 2022]

3. Basharat Hussain, Afroz Ahmad and **A. Abdullah**, Haar Wavelet based numerical technique for solving proportional delay variant of Dirichlet boundary value problems, *International Journal of Nonlinear Analysis and Applications, 2022, 1-14.*
   DOI: 10.22075/ijnaa.2022.23737.2592 [17 August 2022]

4. **A. Abdullah** and Mohd Rafiq, A computational approach for finding the numerical solution of modified unstable nonlinear Schrödinger equation via Haar wavelets, Mathematical methods in applied sciences, 2021, 1-16.
   DOI: 10.1002/mma.7805 [September 2021]

5. I. Ahmad, **Abdullah**, and S. S. Irfan, Nonlinear system of mixed ordered variational inclusions involving XOR operation, Aust. J. Math. Anal. Appl., 18(1), 2021, Art. 21.
   [June 2021]

6. **Abdullah,** Characterization of non-stationry wavelets and non-stationry multiresolution analysis wavelets related to Walsh functions, *Complex Analysis* and Operator *Theory*, 15(5), 2021, Art. No. 86.
   DOI: 10.1007/s11785-021-01132-4 [June, 2021]

7. **A. Abdullah** and Mohd Rafiq, A new numerical scheme based on Haar wavelets for the numerical solution of Chen-Lee-Liu equation, Optik - International Journal for Light and Electron Optics, 226 (Part 2), 2021, 165847.
   DOI: 10.1016/j.ijleo.2020.165847 [January, 2021]

8. I. Ahmad, **Abdullah**, K. M. Khedher and S. S. Irfan, Stability and convergence analysis for a new class of GNOYIP involving XOR operation in ordered positive Hilbert spaces, Filomat, 34(9), (2020), 2877–2895.
   DOI: 10.2298/FIL2009877A **[Aprl, 2020]**

9. **Abdullah,** Vector-valued nonuniform multiresolution analysis related to Walsh function, **Statistics, Optimization and Information Computing, 8 (1), (2020), 206-219.**
   DOI: 10.19139/soic-2310-5070-681 **[March, 2020]**

10. **Abdullah** and Afroz**,** Sufficient Condition for Wavelet Frame on Positive Half-Line, International Journal for Research in Applied Science & Engineering Technology, 7(VI), (2019), 2503-2507.
    DOI:10.22214/ijraset.2019.6421

11. **Abdullah** and F A Shah, Characterization of Scaling Functions on the Spectrum, Acta Univ. Sapientiae, Mathematica, 10 (2), (2018), 340-346.
    DOI: 10.2478/ausm-2018-0026

12. **Abdullah** and Afroz**,** Semi-orthogonal wavelet frames on positive half-line using Walsh Fourier transform, New Trends in Mathematical Sciences, 6 (2), (2018), 175-183.
    DOI: 10.20852/ntmsci.2018.283

13. Afroz and **Abdullah,** Detection of ECG R-Waves using Wavelet Transform, European Journal of Scientific Research, 145 (2) May, (2017), 181-187.

14. **Abdullah**, Affine and quasi-affine frames on positive half line, Journal of Mathematical Extension, 10 (3) (2016), 47-61. (Sep 2016)

15. **Abdullah**, Necessary and Sufficient conditions for wave packet frames on positive half-line, TWMS Journal of Applied and Engineering Mathematics, 6 (2) (2016), 251-263. (July 2016)

16. **Abdullah**, Characterization of *p*-wavelets on positive half line using the Walsh–Fourier transform, International Journal of Analysis and Applications, 10 (2) (2016), 77-84. (July 2016)

17. **Abdullah**, Necessary condition of *p*-wavelet frame on positive half-line using the Walsh-Fourier transform, International Journal of Computer & Mathematical Science, 5 (2) (2016), 105-109.

18. F A Shah and **Abdullah**, Construction of multivariate tight framelet packets associated with dilation matrix, Anal. Theory Appl., 31 (2) (2015), 109-122.
    DOI: 10.4208/ata.2015.v31.n2.2

19. **Abdullah,** Certain characterization of tight Gabor frames on local fields, Mathematical Journal of Interdisciplinary Sciences, 3 (2) (2015), 115-124.

20. **Abdullah,** On the characterization of non-uniform wavelet sets on positive half line, Journal of Information and Computing Science, 10 (1) (2015), 046-053.

21. F A Shah and **Abdullah**, Nonuniform multiresolution analysis on local fields positive characteristic, Complex Anal. Oper. Theory, 9(7) (2015), 1589-1608. DOI: 10.1007/s11785-014-0412-0

22. F A Shah and **Abdullah**, A Characterization of Tight Wavelet Frames on Local Fields of positive characteristic, Journal of Contemporary Mathematical Analysis, 49 (6) (2014), 251-259. DOI: 10.3103/S1068362314060016

23. **Abdullah** and F A Shah, Wave packet frames on local fields of positive characteristic, Applied Mathematics and Computation, 249 (2014), 133-141. DOI: 10.1016/j.amc.2014.09.130

24. **Abdullah,** Vector-valued multiresolution analysis on local fields, Analysis, 34(4), (2014), 415-428. DOI: 10.1515/anly-*2014*-1247

25. **Abdullah** and Sohrab Ali, Non-existence of Regular Wavelet Packets in Hardy Space $H^2(\mathbb{R})$, Int. J. Modern Math. Sci., Florida, USA, 2013, 8(1): 36-47.

26. **Abdullah**, Tight wave packet frames for $L^2(\mathbb{R})$ and $H^2(\mathbb{R})$, Arab J Math Sci, 19(2) (2013), 151-158. DOI:10.1016/j.ajmsc.2012.11.003

27. **Abdullah**, Characterizations of Dimension Functions of Wavelet Packets, Jordan J Math and Stat, 5(3) (2012), 151-167.

28. Firdous Ahmad Shah and **Abdullah**, Necessary condition for the existence of wave packet frames, Southeast Asian Bull. of Maths., (2012) 36: 287-292.

29. Khalil Ahmad, Firdous Ahmad Shah and **Abdullah**, Behavior of shrinkage operators on wavelet packet series, Southeast Asian Bull. of Maths., (2011) 35: 1-12.

30. T. K. Garg, **Abdullah** and Khalil Ahmad, Characterization of Hardy spaces $H^1(\mathbb{R})$ using wavelet packets, in "Modern Methods in Analysis and its Applications", (Mursaleen, Ed.), Anamaya Publishers, New Delhi (2011), 274-288.

31. Khalil Ahmad, **Abdullah** and Firdous Ahmad Shah, Sobolev spaces $L^{p,s}(\mathbb{R})$ and wavelet packets, The Aligarh Bull. of Maths., 27(1) (2008), 23-36.

32. T. K. Garg, **Abdullah** and Khalil Ahmad, Characterization of Lebesgue spaces $L^p(\mathbb{R})$ using wavelet packets, in "Modern Mathematical Models, Methods and Algorithms for Real World System" (A.H. Siddiqi, I. Duff and O. Christensen, Eds.), Anamaya Publishers, New Delhi (2006) and Anshan Ltd. U.K. (2006), 302-317.

33. Khalil Ahmad and **Abdullah**, Certain results on wavelet packets, J. Anal. Appl. 4 (2006), 179-199.

BOOKS:

Khalil Ahmad and **Abdullah**, Wavelet Packets and Their Statistical Applications (Monograph), Springer, 2018.
DOI: 10.1007/978-981-13-0268-8

Conference Organization/ Presentations (in the last five years)

Research Projects (Major Grants/Research Collaboration)

Awards and Distinctions

Association With Professional Bodies

Other Activities