

## **BIODATA**

**Name** : Akhilesh Prasad  
**Designation** : Professor (HAG)  
**Correspondence Address** : Department of Mathematics & Computing,  
Indian Institute of Technology (ISM), Dhanbad – 826004  
**Contact Number** : +91-326-2235666 (Office)  
**E-mail** : apr.bhu@yahoo.com; aprasad@iitism.ac.in  
**Educational Qualifications** : First Division throughout (High School to M.Sc.)  
**Ph.D.** : Awarded in 2002, Department of Mathematics,  
Banaras Hindu University, Varanasi  
**Supervisor** : Prof. R. S. Pathak  
**Ph.D. Thesis Title** : Pseudo-Differential Operators on Gevrey Spaces  
**Specialization** : Functional Analysis  
**Research Interests** : Distribution Theory, Pseudo-Differential Operators, Wavelets  
**WOS Research ID** : FSD-9096-2022  
**Scopus ID** : 7401882139  
**Google Scholar** : 0SID50EAAAAJ  
**ORCID ID** : 0000-0003-4715-5774

### **Academic Positions:**

7. Professor (HAG), Department of Mathematics & Computing, IIT (ISM)-Dhanbad continuously since July 01, 2026.
6. Professor, Department of Mathematics & Computing, IIT (ISM)-Dhanbad continuously since June 06, 2019 to June 30, 2026. (Department of Mathematics & Computing was formerly known as Department of Applied Mathematics)
5. Associate Professor, Department of Applied Mathematics, IIT (ISM)-Dhanbad since September 07, 2010 to June 05, 2019. ( IIT (ISM)-Dhanbad was formerly known as Indian School of Mines, Dhanbad / ISM, Dhanbad )
4. Assistant Professor, Department of Applied Mathematics, ISM-Dhanbad since September 07, 2007 to September 06, 2010.
3. Post-Doctoral Fellow/ Principal Investigator under DST SERC FAST TRACK Proposal for Young Scientists Scheme at Department of Mathematics, Banaras Hindu University, Varanasi since December 2004 to September 06, 2007.
2. Lecturer, Department of Mathematics, Jagatpur P.G College Varanasi, affiliated to V.B.S. Purwanchal University, Jaunpur since August 2003 to November 2004.
1. Research Scholar, Department of Mathematics, BHU-Varanasi since January 1998 to February 2002.

### **Sponsored Projects (Running /Handled):**

| S. N. | Name of the agency                                                        | Title of Project                                                                                                               | Started           | Completed                      | Total Cost (Rs) | PI/Co-PI                                    |
|-------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------|-----------------|---------------------------------------------|
| 10.   | DRDO:<br>Project No.2225<br>(S/SE Panel)                                  | Robust signal reconstruction and prediction in aeronautical system using derivative sampling expansions                        | January 13, 2026  | January 12, 2029<br>(On-going) | 44,98,110/-     | Co-PI<br>(PI: Prof. A. A. Selvan)           |
| 9.    | SERB:<br>Project No.:<br>MTR/2021/000193                                  | Linear Canonical Transform and associated Wavelets and Wavelet Transform                                                       | February 23, 2022 | February 22, 2025              | 6,60,000/-      | PI                                          |
| 8.    | NBHM (DAE):<br>Project No.:<br>020011/7/2021<br>NBHM(R.P)/<br>R&D II/8164 | The $\mu$ th order Mehler-Fock transform and some allied operators on function spaces                                          | April 01, 2021    | March 31, 2024                 | 16,49,533/-     | PI                                          |
| 7.    | DST:SERB<br>File No.: EMR/<br>2016/005141/MS                              | The Kontorovich-Lebedev Transform and related Integral Operators on Function and Distribution Spaces                           | March 16, 2018    | March 15, 2021                 | 15,79,094/-     | PI                                          |
| 6.    | DST: Project No.<br>INT/RU/RSF/P-01<br>(Indo-Russian<br>S&T Project)      | Classical operators on Sobolev and Banach function spaces and Quasi-conformal analysis                                         | October 05, 2016  | October 04, 2019               | 41,51,400/-     | Co-PI<br>(PI: Prof. P. Jain, SAU New Delhi) |
| 5.    | CSIR:<br>Project No.:<br>25(240)/15/<br>EMR-II                            | A Pair of Fractional Powers of Bessel Wavelet Transform and Pseudo-Differential Operators                                      | October 01, 2015  | September 30, 2018             | 17,17,800/-     | PI                                          |
| 4.    | NBHM<br>(DAE):<br>Project No.:<br>2/48 (14)/2011/<br>R&D -II/3501         | Pseudo-Differential Operators and Wavelet Transform Involving Fractional Fourier Transform on Function and Distribution Spaces | April 01, 2012    | March 31, 2015                 | 10,07,500/-     | PI                                          |
| 3.    | UGC:<br>Project No.:<br>34-145/2008(SR)                                   | Pseudo-differential operators associated with Bessel Operator on Gevrey Spaces                                                 | February 01, 2009 | January 31, 2012               | 6,02,345/-      | PI                                          |
| 2.    | IIT (ISM)<br>Project No.:<br>MRP(AM)/<br>Acad/05/2008                     | A pseudo-differential operator involving Hankel transform on Gevrey Spaces                                                     | August 01, 2008   | July 31, 2010                  | 1,00,000/-      | PI                                          |
| 1.    | DST:<br>Project No.:<br>SR/FTP/<br>MS-07/2003                             | Pseudo-differential operators and the Hankel transform on Gevrey Spaces                                                        | December 01, 2004 | September 06, 2007             | 9,25,000/-      | PI                                          |

#### Ph. D Guided/Supervising:

★ **Guided:** Twenty

| S.N. | Regn. No.                               | Name                                                                    | Topic                                                                                                                        | Year | Present Position                                                               |
|------|-----------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------|--------------------------------------------------------------------------------|
| 20.  | PhD/M-30199/<br>2018<br>(VBU Hazaribag) | Chandra Roy<br>(Guide: Prof. G. K. Jha, Co-guide:<br>Prof. A. Prasad)   | Study of Quadratic-Phase<br>Hankel Transformations and<br>Some Associated Operators                                          | 2025 | Project Fellow,<br>CIMFR Dhanbad                                               |
| 19.  | 19DR01791                               | R. K. Verma                                                             | Characterization of Dunkl<br>transform and development of<br>its associated operators                                        | 2024 | Assistant Professor.<br>Siksha 'O'<br>Anusandhan<br>University,<br>Bhubaneswar |
| 18.  | 18DR0011                                | Ajay K. Gupta                                                           | Investigations and theoretical<br>developments on the<br>Lebedev-Skalskaya transforms                                        | 2024 | Assistant Professor,<br>Galgotias University<br>Greater Noida                  |
| 17.  | 17DR000567                              | Amit Kumar<br>(External Guide:<br>Prof. Pankaj Jain)<br>(SAU New Delhi) | Recent advances in<br>linear canonical transform<br>and allied operators                                                     | 2022 | Assistant Professor,<br>Lloyd Business<br>School, Noida                        |
| 16.  | 17DR000573                              | Manab Kundu                                                             | Linear canonical transform<br>and its generalization in<br>quaternion settings                                               | 2022 | Assistant Professor,<br>SRM University,<br>Amaravati                           |
| 15.  | 17DR000464                              | J. S. Maan                                                              | A comprehensive analysis<br>of certain operators related to<br>the index Whittaker transform                                 | 2022 | Assistant Professor,<br>NIT Hamirpur                                           |
| 14.  | 2016DR000120                            | Sandeep. K. Verma                                                       | Characterization of zero-order<br>Mehler-Fock transform<br>and its allied operators                                          | 2021 | Assistant Professor,<br>SRM University,<br>Amaravati                           |
| 13.  | 2015DR1000                              | Pratap B. Sharma                                                        | A progress on quadratic-phase<br>Fourier transform and<br>related operators                                                  | 2021 | Assistant Professor,<br>NIT, Andhra<br>Pradesh                                 |
| 12.  | 2015DR0114                              | Zamir A. Ansari                                                         | Study of certain integral operators<br>in the framework of linear canonical<br>transform domain                              | 2020 | Assistant Professor,<br>IIIT Sonapat                                           |
| 11.  | 2015DR0314                              | Tanuj Kumar                                                             | An investigation and development<br>of a pair of linear canonical<br>Hankel transforms and some<br>allied integral operators | 2019 | Assistant Professor,<br>UPES, Dehradun                                         |
| 10.  | 2014DR0165                              | Upain K. Mandal                                                         | Study of Kontorovich-Lebedev<br>transforms and related operators                                                             | 2018 | Assistant Professor,<br>Nalanda College,<br>Patliputra<br>University Patna     |
| 9.   | 2014DR0010                              | Puneet K. Maurya                                                        | An investigation and development of<br>Hankel-type integral transformations<br>and associated operators                      | 2017 | Lecturer, DIET,<br>Azamgarh<br>(UP Govt.)                                      |
| 8.   | 2013DR0184                              | Kanailal Mahato                                                         | Study of certain pseudo-differential<br>operators and wavelet transforms<br>associated with fractional<br>Hankel transforms  | 2017 | Assistant Professor,<br>BHU, Varanasi                                          |
| 6.   | 2012DR0171                              | Manoj K. Singh                                                          | A study of pseudo-differential operator<br>involving Fourier-Jacobi transform<br>and Sobolev type spaces                     | 2016 | Assistant Professor,<br>St. Xavier College,<br>Ranchi University               |
| 6.   | 2012DR0181                              | Praveen Kumar                                                           | Investigation in the theory of<br>fractional wavelet transform and<br>pseudo-differential operator                           | 2016 | Sri Sathya Sai<br>Institute of<br>Higher Learning, AP                          |

|    |            |                                                                            |                                                                                                    |      |                                                                          |
|----|------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------|--------------------------------------------------------------------------|
| 5. | 2012DR0170 | Sumant Kumar                                                               | Pseudo-differential operators involving Hankel-Clifford transformations and wavelet transformation | 2015 | Assistant Professor,<br>Gossner College,<br>Ranchi University            |
| 4. | 2012DR1008 | Vanita Jain<br>(External Guide:<br>Prof. P. K. Jain)<br>(Delhi University) | Certain classes of analytic functions in the unit disk having negative coefficients                | 2014 | Associate Professor,<br>Maharaja Agrasen<br>College, Delhi<br>University |
| 3. | 2010DR0001 | Vishal K. Singh                                                            | Pseudo-differential operators on some function and distribution spaces                             | 2013 | School Teacher,<br>Azamgarh<br>(UP Govt.)                                |
| 2. | 2009DR0021 | Ashutosh Mahato                                                            | The fractional wavelet transforms on some function spaces                                          | 2013 | Assistant Professor,<br>J. J. College,<br>VBU Hazaribag                  |
| 1. | 2008DR0040 | Manish Kumar                                                               | A study of certain pseudo-differential operators on function and distribution spaces               | 2012 | Professor,<br>BITS Planl,<br>Hyderabad Campus                            |

★ **Supervising:**

| S.N. | Regn. No. | Name                 | Topic                                                                                             |
|------|-----------|----------------------|---------------------------------------------------------------------------------------------------|
| 5.   | 25DP0066  | Debabrata Biswal     | ...                                                                                               |
| 4.   | 24DR0250  | Chayan Bhattacharjee | ...                                                                                               |
| 3.   | 23DR0282  | Pratiksha Moond      | Characterization of Hankel-Stockwell transform and comprehensive Analysis of associated operators |
| 2.   | 23DR0129  | Raj Kumar            | Multiresolution Analysis and wavelet transforms in the frame work of Linear Canonical Transform   |
| 1.   | 22DR0230  | Sudhanshu Ranjan     | The $\mu^{th}$ order Mehlar-Fock transform and some allied operators                              |

**M. Phil Supervised (Guided /Enrolled):**

★ **Guided:** Five

| S.N. | Regn. No.  | Name            | Topic                                                                       | Year | Present Position                                        |
|------|------------|-----------------|-----------------------------------------------------------------------------|------|---------------------------------------------------------|
| 5.   | 2014MP0016 | Chandra Roy     | The wavelet transformation involving first fractional Hankel transformation | 2015 | Project Fellow<br>CIMFR Dhanbad                         |
| 4.   | 2013MP0042 | D. Biswal       | Hankel-Clifford transformation and pseudo-differential operator             | 2014 | Assistant Professor,<br>KKS Womens<br>College, Balasore |
| 3.   | 2012MP0028 | Kanailal Mahato | A study on pseudo-differential operators                                    | 2013 | Assistant Professor,<br>BHU, Varanasi                   |

|    |            |                 |                                                                          |      |                                    |
|----|------------|-----------------|--------------------------------------------------------------------------|------|------------------------------------|
| 2. | 2011MP0004 | Santanu Manna   | A study of fractional Fourier transform and continuous wavelet transform | 2012 | Associate Professor, IIT Indore    |
| 1. | 2010MP0007 | B. S. Kumbhakar | An introduction to fractional Fourier transform                          | 2011 | Associate Professor, NIT Meghalaya |

**M.Tech/ M. Sc. (Project/Dissertations) Guided/Enrolled:**

\* Five Years Integrated M. Tech / M. Sc. (M&C):

(a) Guided: Seventeen

(a) Enrolled: Two

\* Two Years M. Sc (M&C):

(a) Guided: Twenty seven

(b) Enrolled: Two

**Editorship:**

1. Asian-European Journal of Mathematics (World Scientific Publishing)/ (Since November 2024)

**Online Courses Designed/Offered (MOOC/NPTEL/SWAYAM etc.):**

1. Functional Analysis and its Applications

**Patent Filed / Published / Granted:**

1. **Title:** Lightweight Quantum Image Encryption using a Novel Chaotic Feistel Network; Application Number 202531065005, Date of filing: 08.07.2025 and Publication Date: 25.07.2025  
**Inventor(s):** Dr. Akhilesh Prasad, Mr. Pranav P Jagathpathy, Mr. Anany Pravin, Dr. Manish Kumar

**Membership of Professional Societies:**

11. Fellow-Institute of Mathematics and its Applications (FIMA)
10. Member, National Academy of Sciences, India (MNASc.)
9. Life Membership of International Society for Analysis, Its Applications and Computations (ISAAC)
8. Annual Membership of American Mathematical Society.
7. Life Membership of the Indian Science Congress Association.
6. Life membership of Indian Mathematical Society.
5. Life Membership of Ramanujan Mathematical Society.
4. Life membership of Calcutta Mathematical Society
3. Life membership of Mathematical Society, Banaras Hindu University, Varanasi.
2. Life membership of Academy of Progress of Mathematics, Banaras Hindu University, Varanasi.
1. Life membership of Society of Applied Mathematics, Indian School of Mines, Dhanbad.

#### **Reviewer of Some Reputed Journals:**

37. Applicable Analysis (Taylor & Francis)
36. Applied Mathematics (Scientific Research)
35. Applied Mathematics and Computation (Elsevier)
34. Analysis Mathematica (Springer)
33. Asian-European Journal of Mathematics (World Scientific)
32. Banach Journal of Mathematical Analysis (Springer-Birkhauser)
31. Bulletin of the London Mathematical Society
30. Complex Analysis and Operator Theory (Springer-Birkhauser)
29. Complex Variables and Elliptic Equations (Taylor & Francis)
28. Filomat
27. Fixed Point Theory and Applications (Springer)
26. International Journal of Wavelets, Multiresolution and Information Processing (World Scientific)
25. Integral Transforms and Special Functions (Taylor & Francis)
24. Journal of Analysis (Springer)
23. Journal of the Franklin Institute (Elsevier)
22. Journal of Function Spaces (Hindawi)
21. Journal of Indian Mathematical Society
20. Journal of Inequalities and Applications (Springer)
19. Journal of Mathematical Analysis and Applications (Elsevier)
18. Journal of Mathematics (Hindawi)
17. Journal of Pseudo-Differential Operators and Applications (Springer-Birkhauser)
16. Mathematical Methods in the Applied Sciences (Wiley)
15. Mathematical Reviews (American Mathematical Society)
14. National Academy Science Letters (Springer)
13. Proceedings of the National Academy of Sciences, India Section A: Physical Sciences (Springer)
12. Pure and Applied Mathematics Quarterly (International Press)
11. Ramanujan Journal (Springer)
10. Results in Mathematics (Springer-Birkhauser)
9. Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales. Serie A. Matemáticas (Springer)
8. Rocky Mountain Journal of Mathematics (Cornell University)
7. Science China Mathematics (Springer)
6. Transactions on Signal Processing (IEEE)
5. Zentralblatt Maths (European Mathematical Society)
4. Applied Mathematics Letter (Elsevier)
3. Boletim da Sociedade Paranaense de Matemática
2. Investigations of Mathematical Sciences
1. Thai Journal of Mathematics

**Number of Courses / Practical's Designed:**

2. Wavelets: Theory and Applications (Course Code: NMCD539)
1. Distribution Theory and its Applications (Course Code: NMCD536)

**Travel Grants for International Conference/Collaboration work:**

10. International Society for Analysis, its Applications and Computation (ISAAC 2023) University of Sao Paulo, Campus Ribeirao Preto, **Brazil**. [SERB: MATRICS Project No.: MTR/2021/000193] (2023).
9. International conference on Subdivision; Geometric and Algebraic Methods; Iso-geometric Analysis and Refinability, (SMART 2022), University of Bologna, Italy at Rimini, **Italy**. [IIT (ISM)] (2022).
8. Collaboration work at Steklov Mathematical Institute / People Friendship University, Moscow, **Russia** under Indo-Russian project under grant no. INT/RU/RSF/P-01 [DST] (2018)
7. International conference "Strobl18" Harmonic Analysis and Applications, Strobl, **Austria**. [IIT (ISM)] (2018)
6. 7th Conference on Function Spaces at Southern Illinois University, Edwardsville, **USA**. [ISM + Host Institute] (2014).
5. International Conference on Applied & Computational Mathematics at Ankara, **Turkey**. [CSIR + ISM] (2012).
4. International Conference on Applied Mathematics & Approximation Theory at Ankara, **Turkey**. ISM (2012).
3. International Congress of Mathematician (ICM-2010) at Hyderabad - **ICM** (2010).
2. International Conference on Approximation Theory and Signal Analysis at Lindau, **Germany**. ISM (2009).
1. International Conference at Halmholtz Zenturm Munchen, **Germany**. [DST + Host Institute] (2007).

**Training Programme/Workshop/Conferences/Lectures/other academic meets Organized:**

8. Organized a Malaviya Mission Teacher Training Programme on "Wavelet Analysis and Applications" during November 10-15, 2025 as a Coordinator. [Financial Support: UGC]. Total cost Rs. 6, 30, 300/-
7. Organized a "National Conference on Mathematical Analysis and Applications", during September 04-06, 2025 as a convener. Total cost Rs. 14, 77, 500/- [Financial Support: SERB + NBHM].
6. Organized a "National Conference on Harmonic Analysis and Applications", during December 02-04, 2022 as a convener. Total cost Rs. 6, 06, 000/- [Financial Support: SERB + IIT (ISM)].
5. Organized a Short Term Advanced Training Programme on "Integral Transformations, Distributions, Wavelet Analysis and Applications" (Phase-II), during October 08-12, 2018 as a coordinator. Total cost Rs. 2, 13, 924/- [Self Finance].
4. Organized a Short Term Training Programme on "Non-linear Analysis and Optimization", during December 01-05, 2017 as a co-coordinator. Total cost Rs. 1, 67, 115/- [Self Finance].

3. Organized a Short Term Training Programme on "Nonlinear Analysis and its Application to Optimization Techniques", during August 18 - 22, 2017 as a co-coordinator. Total cost Rs. 3, 63, 500/- [**Financial Support: SERB + NBHM**].
2. Organized a Short Term Advanced Training Programme on "Integral Transformations, Distributions and Wavelet Analysis", during December 14-18, 2015 as a coordinator. Total cost Rs. 6, 27, 250/- [**Financial Support: NBHM + SERB + INSA**].
1. A talk of Prof. (Retd.) P. K. Jain (F.N.A.Sc), University of Delhi on topic "Schauder Decompositions and Frames in Banach Spaces" was organised on February 9, 2012 at 3:30 PM in the Management Study Hall.

**Other Information (Organizational/Committee/ Administrative Work):**

**I- Internal IIT (ISM):**

27. Member of Anti-Ragging Squad/Flying Squad for AY 2025-26
26. Chief Warden Sapphire Hostel during July 01, 2025 to continue.
25. Mentor of some Integrated M.Tech students since September 30, 2024 to continue.
24. Member of special invigilation teams for Semester Examination 2025 - 2026
23. Anti-ragging committee for new entrants since 2022 to continue.
22. Departmental Time-Table in-charge during February 14, 2022 - April 10, 2024.
21. DPGC convener during July 2018 - October 14, 2022. (**Two Terms**).
20. Chief Warden Diamond Hostel during July 01, 2019 - June 30, 2020.
19. Warden Diamond Hostel during June 01, 2018 - June 30, 2019.
18. Senate Member IIT (ISM) Dhanbad Since June 06, 2019 to continue
17. Member of DFSC (Departmental Faculty Screening Committee) since 2019 to continue.
16. Coordinator of M. Tech (Data Analytics) course continuously from Session 2019-2020.
15. JRF in-charge (Mathematics & Computing / Applied Mathematics) during September 2018- August 2021.
14. Member of central library committee during June 01, 2015 - May 31, 2018.
13. Coordinator of M. Tech (M & C) Integrated course during Session 2011-12 to June 2019.
12. DSC members/Chairman for Ph.D students of several Departments like AGL/AGP/MS/M&C etc since 2019 to continue.

**II- External within India:**

11. Member of the Doctoral Committee of SRM University, Andhra Pradesh, December 2024 to continue.
10. RRC member of Dr. Vishwanth Karad MIT-World Peace University, Pune, December 2023 to continue.
9. Member of the Doctoral Committee of VIT-University, Andhra Pradesh, December 2020 to continue.
8. Member of Faculty selection Committee, NIT Raipur, 2023

7. Member of Faculty selection Committee, NIT Kurukshetra, 2023
6. Member of the Board of the school of Physical Sciences, Mizoram University, since October 3, 2022 to continue.
5. Member of Faculty selection Committee, Jharkhand Public Service Commission, 2019
4. PhD Thesis Examiner: IIT Delhi, IIT Roorkee, IIT (BHU) Varanasi, IIT Patna, NIT Kurukshetra, NIT Patna, Delhi University, NERIST Itanagar, Institute of Science, BHU Varanasi, Central University Motihari, MS University Vadodara, Lucknow University etc.

### III- International:

3. PhD Thesis Examiner: Faculty of sciences Ain Chock, Hassan II University of Casablanca - Morocco, 2025
2. Research project evaluation Committee, National Research, Development and Innovation Office, Hungary, 2024
1. Research project evaluation Committee, National Research, Development and Innovation Office, Hungary, 2023

### List of Major Publications:

139. **Akhilesh Prasad** and P. Moond, Stockwell Transform Based on the Quadratic-Phase Hankel Transform, *Integral Transforms and Special Functions*, DOI: 10.1080/10652469.2026.2703798. (Taylor & Francis)/SCIE/Q2.
138. S. Ranjan, **Akhilesh Prasad** and U. K. Mandal, Sobolev-type spaces related to the  $\mu$ th order Mehler-Fock transform, *Journal of Pseudo-Differential Operators and Applications*, **17** (2), Article number: 31, pp. 1-18, (2026). (Springer-Birkhauser)/ SCIE/Q1.
137. R. K. Verma and **Akhilesh Prasad**, The infinite order integro-differential operators associated with Dunkl operator on  $\mathbb{R}$ , *Complex Analysis and Operator Theory*, **20** (3), Article number: 76, pp. 1-18, (2026). (Springer-Birkhauser)/ SCIE/Q2.
136. S. Ranjan, **Akhilesh Prasad** and U. K. Mandal, Wavelet transform via  $\mu$ th order Mehler-Fock transform, *Proceedings of the National Academy of Sciences, India Section A: Physical Sciences*, DOI: 10.1007/s40010-026-01127-w, (2026). (Springer)/SCIE/Q3.
135. **Akhilesh Prasad** and A. Kumar, Weyl transform associated with linear canonical wavelets, *Journal of Analysis*, DOI: 10.1007/s41478-026-01079-9, (2026). (Springer) / ESCI/Q1.
134. J. S. Maan and **Akhilesh Prasad**, The Mehler–Fock–Clifford Transform Framework for Parseval–Goldstein and Abelian Theorems in Weighted Lebesgue Spaces, *Acta Scientiarum Mathematicarum*, DOI: 10.1007/s44146-026-00230-z (2026). (Springer)/ESCI/Q3.
133. R. K. Verma and **Akhilesh Prasad**, On the Abelian Properties of Dunkl Transforms: A Distributional Approach, *Asian-European Journal of Mathematics*, DOI: 10.1142/S1793557125501578 (2025). (World Scientific)/ESCI/Q3.
132. **Akhilesh Prasad**, and Raj Kumar, Multiresolution Analysis and Orthonormal Linear Canonical Wavelets in Generalized Sobolev Spaces, *Journal of Pseudo-Differential Operators and Applications*, **16** (4), Article number: 86, (2025), pp. 1-34, (2025). (Springer-Birkhauser)/ SCIE/Q1.

131. **Akhilesh Prasad**, S. Ranjan, An operational calculus of  $\mu^{th}$  order Mehler-Fock transform, *Complex Analysis and Operator Theory*, **19** (2), Article number: 41, pp. 1-33, (2025). (Springer-Birkhauser)/SCIE/Q2.
130. R. K. Verma and **Akhilesh Prasad**, Besov-type spaces associated with Dunkl wavelet transform on  $\mathbb{R}$ , *Mathematical Methods in the Applied Sciences*, **48** (8), pp. 8985-8993, (2025). (Wiley)/SCIE/Q1.
129. **Akhilesh Prasad**, U. K. Mandal and Sudhanshu Ranjan, The  $\mu^{th}$  order Mehler-Fock transform and allied pseudo-differential operator, *Integral Transforms and Special Functions*, **36** (3), pp. 163-175, (2025). (Taylor & Francis)/SCIE/Q2.
128. A. K. Gupta and **Akhilesh Prasad**, The heat kernel in the framework of the Lebedev-Skalskaya transform, *Applicable Analysis*, **104** (8), pp. 1597-1609 (2025). (Taylor & Francis)/SCIE/Q2
127. C. Roy, T. Kumar, **Akhilesh Prasad**, and G. K. Jha, Pseudo-differential operators associated with a pair of quadratic-phase Hankel transformations, *Journal of Pseudo-Differential Operators and Applications*, **16** (1), Article number: 05, pp. 1-26, (2025). (Springer-Birkhauser)/ SCIE/Q1.
126. R. K. Verma and **Akhilesh Prasad**, SG pseudo-differential operators in Dunkl setting, *Georgian Mathematical Journal*, **32** (3), pp. 501-513, (2025). (De Gruyter)/ SCIE/Q2.
125. C. Roy, T. Kumar, **Akhilesh Prasad**, and G. K. Jha, The wavelet transformation associated with quadratic-phase Hankel transform, *National Academy Science Letters*, **48** (1), pp. 65-71, (2025). (Springer)SCIE/Q3.
124. C. Roy, **Akhilesh Prasad** and G. K. Jha, The wave packet transformation in the framework of quadratic-phase Hankel transformation, *International Journal of Applied and Computational Mathematics*, **11** (1), Article number: 02, pp. 1-12, (2025). (Springer) / SCOPUS.
123. K. L. Mahato, S. Arya and **Akhilesh Prasad**, Pseudo-differential operators associated with Gyrator transform, *Hacettepe Journal of Mathematics and Statistics*, **54** (4), 1426-1441, (2025). (DergiPark)/SCIE/Q2.
122. S. Varghese, **Akhilesh Prasad** and M. Kundu, Properties and applications of quaternion quadratic phase Fourier transforms, *Journal of Pseudo-Differential Operators and Applications*, **15** (4), Article number: 84, pp. 1-26 (2024). (Springer-Birkhauser) / SCIE/Q1.
121. **Akhilesh Prasad** and M. Kundu, Spectrum of quaternion signals associated with quaternion linear canonical transform, *Journal of the Franklin Institute*, **361** (2), pp. 764-775 (2024). (Elsevier)/SCIE/Q2.
120. A. K. Gupta, U. K. Mandal and **Akhilesh Prasad**, Lebedev-Skalskaya transform related continuous wavelet transform, *Results in Mathematics*, **79** (3), Article number: 99, pp. 1-21 (2024). (Springer-Birkhauser)/SCIE/Q2.
119. **Akhilesh Prasad**, R. K. Verma and S. K. Verma, Wavelet transform associated with Dunkl transform, *Integral Transforms and Special Functions*, **35** (9), pp. 481-496, (2024). (Taylor & Francis)/SCIE/Q2.
118. J. S. Maan and **Akhilesh Prasad**, A pair of pseudo-differential operators involving index Whittaker transform in  $L_2^a(\mathbb{R}_+; m_a(x)dx)$ , *Acta Mathematica Sinica, English Series*, **40** (6), pp. 1420-1430, (2024). (Springer)/SCIE/Q2.
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7. **Akhilesh Prasad** and M. Kumar, Continuity of pseudo-differential operator  $h_{\mu,a}$  involving Hankel translation and Hankel convolution on some Gevrey spaces, *Integral Transforms and Special Functions*, **21**(6), pp. 465-477, (2010). (**Taylor & Francis**)/SCIE/Q2.
6. **Akhilesh Prasad**, Multiplication of pseudo-differential operator involving Hankel convolution on some Gevrey spaces, *Journal of the Indian Mathematical Society*, **74**(3-4), pp. 133-145, (2007) (SCOPUS).
5. **Akhilesh Prasad**, Pseudo-differential operator involving Hankel translation and Hankel convolution on some Gevrey spaces, *Journal of the Indian Mathematical Society*, **73**(3-4), pp. 153-165, (2006) (SCOPUS).
4. R. S. Pathak and **Akhilesh Prasad**, A generalized pseudo-differential operator on Gel'fand-Shilov space and Sobolev space, *Indian Journal of Pure and Applied Mathematics*, **37**(4), 223-235, (2006). (INSA/Springer)/SCIE/Q3.
3. R. S. Pathak and **Akhilesh Prasad**, The pseudo-differential operator  $h_{\mu,a}$  on some Gevrey spaces, *Indian Journal of Pure and Applied Mathematics*, **34**(8), pp. 1225-1236, (2003). (INSA/Springer)/SCIE/Q3.
2. R. S. Pathak and **Akhilesh Prasad**, The pseudo-differential operator  $h_{\mu,a}$  on Hankel invariant spaces, *Applicable Analysis*, **82**(2), pp. 187-196, (2003). (**Taylor & Francis**)/SCIE/Q2.
1. R. S. Pathak and **Akhilesh Prasad**, Continuity of pseudo-differential operators associated with the Bessel operators in some Gevrey spaces, *Applicable Analysis*, **81**(3), pp. 637- 662, (2002). (**Taylor & Francis**)/SCIE/Q2.

#### Invited Talk:

17. Short Term/Faculty Development Programme on Exploring Wavelets: From Teaching Foundations to Research Innovations under Malviya Mission Teacher Training Programme during May 11 - 16, 2026 organized by IIT Patna. (**Delivered two talks** entitled "From Fourier Analysis to Wavelet Theory: Foundations, Applications, and Research Directions")
16. National e-Workshop on Mathematical Techniques and Research Innovation in Interdisciplinary Applications (e-MATRICA-2025) during May 19–23, 2025 organized by NIT Hamirpur, (**Delivered a talk** entitled "A study on the  $\mu^{th}$  order Mehler-Fock transform")
15. 90th Annual Conference of the Indian Mathematical Society during December 23-26, 2024 organized by Dr. Vishwanath Karad MIT World Peace University, Pune. (**Delivered a talk** entitled "An operational calculus of  $\mu^{th}$  order Mehler-Fock transform")

14. 8th Refresher Course in Mathematics for teachers of University and Colleges (RCM 2023) during December 08-21, 2023 organized by Malviya Mission Teacher Training Centre, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur. (**Delivered a talk** entitled "Linear canonical transform and allied wavelet transform")
13. Instructional School for Mathematical Foundation (ISMF 2022) during October 08-23, 2022 organized by Indian Institute of Technology, Patna.
12. National conference of Academy for progress of Mathematics on Recent Advances in Mathematical Analysis and Applications(NCAPM-RAMAA-2022) during May 07 - 08, 2022 organized via hybrid mode by DST-Centre for Interdisciplinary Mathematical Sciences, Institute of Science, BHU-Varanasi (**Delivered a talk** entitled" The quadratic-phase Fourier transform").
11. 37th Annual conference of the Mathematical Society, BHU-Varanasi on Modern Mathematics and its Applications (NCMMA-2022) during January 29 - 30, 2022 organized via virtual mode by Department of Mathematics, Institute of Science, BHU-Varanasi (**Delivered a talk** entitled" Wavelet transforms associated with linear canonical transform"). I was **chief guest** in the valedictory function of this conference.
10. International Conference on Recent Advances in Mathematics and Computational Engineering (ICRAMCE-2022) during January 06 - 07, 2022 organized via virtual mode by SSN College of Engineering, Tamil Nadu(**Delivered a talk as keynote speaker on paper** entitled" Continuous wavelet transform associated with linear canonical transform"). I was **chief guest** in the inaugural function of this conference.
9. International conference on Analysis and its Applications-2020 (ICAA - 2020 - Nepal), during April 9-11, 2021 organized via virtual mode jointly by Nepal Mathematical Society, Tribhuvan University, Khamandu University, South Asian University, New Delhi, (**Delivered a talk on paper** entitled" The convolution and pseudo-differential operator associated with zero-order Mehler-Fock transform").,
8. Short Term Training Programme on Nonlinear Analysis and its Application to Optimization Techniques during August 18 - 22, 2017 at Department of Applied Mathematics, Indian Institute of Technology (ISM), Dhanbad.
7. QIP Short term course on Algebra, Analysis and Applications during July 03-09, 2017 at Department of Mathematical Sciences, Indian Institute of Technology (BHU), Varanasi.
6. National Conference on Applications of Mathematics during February 25-26, 2016 at Department of Mathematics and Computer Science, Mizoram University, Aizwal. (**Delivered a talk on paper** entitled "Differential Operator Associated with fractional Fourier transform").
5. Conference on Analysis and Applications during December 09-11, 2017 at Department of Mathematics, South Asian University, New Delhi. (**Delivered a talk on paper** entitled "A pair of linear canonical transformations and associated pseudo-differential operators").
4. International Conference on Applied & Computational Mathematics during October 03-06, 2012 at Institute of Applied Mathematics, Middle East Technical University, Ankara, Turkey. (**Delivered a talk on paper** entitled "The fractional Fourier transform and its Applications").
3. Advanced Training Programme on Integral Transforms, Wavelets, Distribution Theory and Applications during July 12-21, 2012 at DST- Centre for Interdisciplinary Mathematical Sciences, Banaras Hindu University, Varanasi, **Delivered**

- a **talk on paper** entitled “The Generalized Wavelet Transform associated with Fractional Fourier Transform”).
2. Under Graduate Training Programme in Linear Algebra and Analysis during May 28- June 06, 2012 at Department of Applied Mathematics, Indian School of Mines, Dhanbad (**Delivered some lectures on Wavelets**).
  1. Workshop on Approximation Theory and Signal Analysis during March 21-24, 2009 at Institute of Biomathematics and Biometry at the Helmholtz centre Munich, Lindau (Lake Constance), Germany. (**Delivered a talk on paper** entitled “A generalized Pseudo-differential Operator on Gel’fand-Shilov Space and Sobolev Space”).

**Conference / Symposium /Workshop Attended / Presented papers:**

**International:**

12. 14<sup>th</sup> International Society for Analysis, its applications and Computation (ISAAC 2023) Congress, July 17-21, 2023, organized by University of São Paulo, Campus Ribeirão Preto, Brazil. (**Delivered a talk on paper** entitled “Pseudo-differential operator associated with index Whittaker transform”).
11. 3<sup>rd</sup> International Conference on Subdivision; Geometric and Algebraic Methods; Isogeometric Analysis and Refinability, (SMART 2022) September 20-24, 2022, organized by University of Bologna, Italy at Rimini, Italy. (**Delivered a talk on paper** entitled “Weyl transform associated with linear canonical wavelets”).
10. International Conference on Analysis and its Applications- 2021, April 08-11, 2021, organized by Nepal Mathematical Society, Kathmandu. (**Delivered a talk on paper** entitled “The convolution and pseudo-differential operator associated with zero-order Mehler–Fock transform”).
9. International Conference “Strobel18” Harmonic Analysis and Applications, June 04-08, 2018, Strobl, Austria. (**Delivered a Scientific talk on paper** entitled “Pseudo-differential operators involving Kontorovich-Lebedev Transform”).
8. 7th Conference on Function Spaces, May 20-24, 2014, at Southern Illinois University, Edwardsville, USA. (**Delivered a talk on paper** entitled “Pseudo-differential operators involving Hankel-Clifford Transformation”).
7. International Conference on Applied & Computational Mathematics, October 03-06, 2012 at Institute of Applied Mathematics, Middle East Technical University, Ankara, Turkey. (**Delivered a talk on paper** entitled “The fractional Fourier transform and its Applications”).
6. International Conference on Applied Mathematics & Approximation Theory, May 17-20, 2012 at TOBB University of Economics, Ankara, Turkey. (**Delivered a talk on paper** entitled “Boundedness of pseudo-differential operator associated with fractional Fourier transform”).
5. International Congress of Mathematicians (ICM-2010), September 19-27, 2010, at Hyderabad Convention Centre (HICC), Organized by University of Hyderabad. (**Presented a Paper** entitled “Continuity of Pseudo-Differential Operator Involving Hankel Translation and Hankel Convolution on some Gevrey Spaces”).
4. Workshop on Approximation Theory and Signal Analysis (March 21-24, 2009), Institute of Biomathematics and Biometry at the Helmholtz centre Munich, Lindau (Lake Constance), Germany. (**Delivered a talk on paper** entitled “A generalized Pseudo-differential Operator on Gel’fand-Shilov Space and Sobolev Space”).

3. Ninth conference of the International academy of Physical Sciences (CONIAPS IX, 2007) February 3-5, 2007), Department of Mathematics, Dr. B. R. Ambedkar (Agra) University, Agra.
2. International Conference on Analysis and Application (December; 22-25, 2003), Department of Mathematics, B.H.U. Varanasi.
1. International Conference on Geometry, Analysis and Applications (August; 21-24, 2000), Department of Mathematics, B.H.U. Varanasi.

**National:**

17. 80th Annual conference of the Indian Mathematical Society (December 27-30, 2014) at Department of Applied Mathematics, Indian School of Mines, Dhanbad (Participated)
16. Advanced Training Programme on Integral Transforms, Wavelets, Distribution Theory and Applications (July 12-21, 2012), DST- Centre for Interdisciplinary Mathematical Sciences, Banaras Hindu University, Varanasi, **Delivered a talk on paper** entitled "The Generalized Wavelet Transform associated with Fractional Fourier Transform"
15. Under Graduate Training Programme in Linear Algebra and Analysis May 28-June 06, 2012), Department of Applied Mathematics, Indian School of Mines, Dhanbad (**Delivered some lectures on Wavelets**).
14. 25th Annual Conference of the Mathematical Society (December; 22-24, 2009) at Department of Mathematics B.H.U. Varanasi-5. (**Presented a paper** entitled "Continuity of Hankel Potential Involving Hankel Translation and Hankel Convolution on some Gevrey Spaces").
13. National seminar on Recent Advances in Theoretical and Applied Seismology (March 27-28, 2009), Department of Applied Mathematics , Indian School of Mines University, Dhanbad-826004. (**Presented a paper** entitled "A generalized Pseudo-differential operator on Gel'fand-Shilov Space")
12. 24th Annual Conference of the Mathematical Society (December; 30-31, 2008) at Department of Mathematics B.H.U. Varanasi-5. (**Presented a paper** entitled "Hankel Transformation on a Gevrey Space").
11. 4th Group monitoring workshop cum 7th meeting of the expert panel on Fast Track Proposals for Young Scientist in Physical and Mathematical Sciences held on April 19-20, 2007 at Sikkim Manipal Institute of Technology, Sikkim.
10. National conference on Modern Analysis and Allied Areas (February 23-24, 2007) at Department of Mathematics, B.H.U. Varanasi-5. (**Presented a paper** entitled "The Sobolev Type Spaces").
9. XXII Annual Conference of The Mathematical Society (December; 15-16, 2006) at Department of Mathematics B.H.U. Varanasi-5.
8. The conference on Mathematics of Bharata Ganita Parisad (November; 18-19, 2006) at the Department of Mathematics & Astronomy, Lucknow University Lucknow. (**Presented a paper** entitled "The Closable; Maximal and Minimal Pseudo-differential operator").
7. The XVI Annual Conference of the Jammu Mathematical Society (March; 01-03, 2006) at Department of Mathematics, University of Jammu.
6. XXI Annual Conference of The Mathematical Society (January; 23-24, 2006) at Department of Mathematics B.H.U Varanasi-5, (**Presented a paper** entitled "An Introduction to Pseudo- Differential Operators").

5. National Conference on Analysis and its Application (January; 20-22, 2006) at Department of Mathematics, B.H.U. Varanasi-5. (**Presented a paper** entitled “Pseudo-Differential Operator Involving Hankel Translation and Hankel Convolution on some Gevrey Spaces”).
4. National Symposium on Scientific Computing with Application to Partial Differential Equations (Nov; 19-21, 2005), at Department of Mathematics, Indian Institute of Technology, Kanpur.
3. National Conference on Emerging Areas in Mathematical Sciences in first Quarter of the Century (February; 11-13, 2005), Indian Society of Mathematics and Mathematical Sciences at D.D.U University Gorakhpur. (**Presented a paper** entitled “The Generalized Pseudo-Differential Operator on some Gevrey Spaces”).
2. National Board of Higher Mathematics, Olympiad Problem Solving Camp. (November; 25-28, 2002), Department of Mathematics, B.H.U Varanasi.
1. Third Annual Conference of the Society for the Special Functions and their Applications (March; 4-6, 2002), Department of Mathematics, B.H.U Varanasi, (**Presented a paper** entitled “Continuity of Pseudo-Differential Operators Associated with the Bessel Operator in some Gevrey Spaces”).

Akhilesh Prasad