

Parveen Kumar

August 8, 2026

Research Scholar
Department of Mathematics
Indian Institute of Technology, Ropar, India

pswamifca@gmail.com
parveen.24maz0013@iitrpr.ac.in

Research Interests

- Partial differential equations (Schrödinger Equations, Parabolic Equations and Wave equation).
- Inverse Problems for Partial Differential Equations.
- Inverse problem for Integral geometry.

Education

- **Indian Institute of Technology, Ropar** Punjab, India
Doctor of Philosophy (Ph.D.) in Mathematics July 18, 2024 to Present
– Supervisor: Dr. Manmohan Vashisth
- **Indian Institute of Technology, Jammu** Jammu and Kashmir, India
Junior Research Fellow March 8, 2022 to January 31, 2023
– Title of Project: *Inverse coefficients and shape identification problems for PDEs*
– Principal Investigator: Dr. Manmohan Vashisth
- **National Institute of Technology, Nagpur** Maharashtra, India
M.Sc. in Mathematics, Marks: 8.59 CGPA August 1, 2018 to July 31, 2020
– Title of master's thesis: *Approximation of bandlimited functions by trigonometric polynomials*
– Master's thesis advisor: Dr. A. Sathish Kumar
- **Pt. Neki Ram Sharma Govt. College, Rohtak** Haryana, India
B.Sc. Mathematics (Honors), Marks: 73.78 % August 1, 2014 to July 31, 2017
- **Central Board for Secondary Education** India
Intermediate, Marks: 82.8 % April 1, 2013 to March 31, 2014
- **Central Board for Secondary Education** India
Matriculation, Marks: 9.8 CGPA April 1, 2011 to March 31, 2012

Honours and Awards

- Qualified IIT JAM (MA) 2017 and 2018, CSIR-UGC JRF (Mathematical Sciences) November 2020, and GATE (MA) 2021.

Publications and Preprints

- **Parveen Kumar**, Gen Nakamura and Manmohan Vashisth, *Reconstruction of Time-Dependent Coefficients in a Dynamical Schrödinger Equation*. Preprint, 2026. [arXiv:2606.17023](https://arxiv.org/abs/2606.17023)

- Rahul Bhardwaj and **Parveen Kumar**, *A partial data inverse problem for reaction diffusion convection system*. In preparation.
- Mandeep Kumar, **Parveen Kumar** and Manmohan Vashisth, *A partial data inverse problem for semilinear wave operator*. In preparation.

Conference Talks

- **12th Applied Inverse Problems Conference (AIP 2025)**, Getulio Vargas Foundation (FGV EMap), Rio de Janeiro, Brazil, July 28 – August 01, 2025.
 – Talk title: *Determining the Time-Dependent Convection Term and Matrix-Valued Potential in a Heat Equation from Partial Data*.

Workshops and Schools

- **Summer School on Inverse Problems**, TIFR Centre for Applicable Mathematics (CAM), Bengaluru, India, July 06 – July 18, 2026.
- **Multi-scale Analysis cum Conference on Differential Equations**, Indian Institute of Technology Ropar, India, February 26 – March 02, 2024.
- **AIS on Elliptic and Parabolic Partial Differential Equations**, Indian Institute of Science (IISc), Bengaluru, India, December 04 – December 23, 2023.
- **Advances in Differential Equations: Theory and Computation**, Thapar Institute of Engineering and Technology, Patiala, India, October 02 – October 07, 2023.
- **NCM Instructional School and Training (IST) on Ordinary Differential Equations and Dynamical Systems**, Indian Institute of Technology Mandi, India, June 26 – July 08, 2023.