

Dr. PRATIMA RAI

Email: pratimarai5@gmail.com , prai@maths.du.ac.in

Mobile: +91-9711299911



Academic Qualification:

- Ph. D in mathematics from Panjab University Chandigarh in year 2013 on the topic “Numerical analysis of singularly perturbed differential-difference turning point problems.
- Cleared UGC-CSIR NET(JRF) in June 2008.
- M.Sc (Hons) Mathematics from Panjab University Chandigarh in year 2008.
- B.Sc Mathematics from Panjab University Chandigarh in year 2006.

Positions Held:

- Working as Assistant Professor at Department of Mathematics, University of Delhi since February 2014.
- Worked as **Assistant Professor** at Amity University, Noida, India from July 2012 January 2014.
- Worked as CSIR-SRF at Department of Mathematics, Panjab University, Chandigarh, from January 2011-June 2012.
- Worked as CSIR-JRF at Department of Mathematics, Panjab University, Chandigarh, from January 2009-December 2010.
- Worked as **Lecturer** at “Shaheed Udham Singh college of Engineering and Technology” Mohali, Punjab, India for the semester July-December 2008.

Area of specialization:

Singular perturbation problems, Differential equations, numerical analysis.

Research Guidance:

- Currently guiding on M. Phil student.

Awards and Distinctions:

- Got best paper award for presenting paper titled “A uniformly convergent numerical method for singularly perturbed delay differential equation with turning point” at “Chandigarh Science Congress” held at Panjab University Chandigarh, India, from February 26-28, 2011.

- Got best paper award for presenting paper titled “epsilon-uniformly convergent finite difference scheme for singularly perturbed delay differential equations with twin boundary layers” at “77th Annual Conference of Indian Mathematical Society” held at “Swami Ramananda Teerth Marathwada University, Nanded, Maharashtra” India, during December 27-30, 2011.

Research Profile:

Publications:

- Pratima Rai, Kapil. K. Sharma, Parameter uniform numerical method for singularly perturbed differential-difference equations with interior layer, International Journal of Computer mathematics, 88(16) (2011) 3416-3435 ISSN 0020-7160 (Print), 1029-0265 (Online), impact Factor: 0.566.
- Pratima Rai, Kapil. K. Sharma, Numerical analysis of singularly perturbed delay differential turning point problem, Applied Mathematics and Computation, 218 (2011) 3483-3498, ISSN: 0096-3003 impact factor: 1.349.
- Pratima Rai, Kapil. K. Sharma, Numerical method for singularly perturbed differential-difference equations with turning point, International Journal of Pure and Applied Mathematics, 73(4) 2011, 451-470, ISSN 1311-8080 (printed version), ISSN 1314-3395 (on-line version), impact factor:0.254.
- Pratima Rai, Kapil. K. Sharma, Numerical study of singularly perturbed differential-difference equation arising in the modeling of neuronal variability, Computer and Mathematics with Applications 63 (2012) 118-132, ISSN: 0898-1221, impact factor: 2.069.
- Pratima Rai, Kapil. K. Sharma, Fitted mesh numerical method for singularly perturbed delay differential turning point problems exhibiting boundary layers, International Journal of Computer mathematics 89(7) 2012 944-961, ISSN 0020-7160 (Print), 1029-0265 (Online), impact Factor: 0.566.
- Pratima Rai, Kapil. K. Sharma, The numerical study of singularly perturbed differential-difference turning point problems: Twin boundary layers, Proceedings of ENUMATH 2011, the 9th European Conference on Numerical Mathematics and Advanced Applications, Leicester, September 2011, 285-292.
- Kapil. K. Sharma, Pratima Rai, K. C. Patidar, A Review on Singularly Perturbed Differential Equations with Turning Points and interior Layers , accepted in Applied Mathematics and Computation, 219(22), 2013, 10575-10609, elsevier, ISSN: 0096-3003 impact factor: 1.349 .
- Pratima Rai, Kapil K. Sharma, Singularly perturbed convection-diffusion turning point problem with shifts" Accepted to be published in the conference proceeding of “ICRTMAA 2014” be published by Springer.

Paper Presentation/invited talk:

- Participated in “Chandigarh Science Congress”, held at Panjab University Chandigarh, India from 26- 28th February, 2011 and gave talk on “A uniformly convergent numerical method for singularly perturbed delay differential equation with turning point”.
- Participated in the conference “European Numerical Mathematics and Advanced applications” held at the University of Leicester, Leicester, U.K from 5-9th September, 2011 and presented a paper titled “The Numerical study of singularly perturbed delay differential turning point problems”.
- Participated in “77th Annual conference of Indian Mathematical Society” held at Swami Ramananda Teerth Marathwada University, Nanded, Maharashtra during December 27-30th 2011 and presented paper titled “ epsilon-uniformly convergent finite difference scheme for singularly perturbed delay differential equations with twin boundary layers”.
- Participated in “11th Biennial conference of the Indian Society of Industrial and Applied Mathematics Emerging Mathematical Methods, Models and Algorithms for Science and Technology” held at Gautam Buddha University, Noida, from December 15-16, 2012 and presented paper titled “ A uniformly convergent finite difference scheme for singularly perturbed differential-difference turning point problems: Interior layer”.
- Participated in the conference " International conference on recent trends in mathematical analysis and its applications" held at IIT Roorkee from 21-23rd December 2014 and presented paper titled “ Singularly perturbed convection-diffusion turning point problem with shifts”.
- Gave invited talk on “An epsilon-uniform fitted operator method for singularly perturbed delay differential turning point problem” in the work shop “Advance workshop on finite difference methods for differential equations" held at South Asian University from 13-17th March 2015.”