

DR. RAMJIWARI

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Email: ram1maths@gmail.com ; ram03fma@iitr.ac.inHome Page: <http://jiwari.com/>**Research Interests:**

Numerical Analysis

Differential Quadrature Method

Haar Wavelets Analysis

Numerical Solution of PDEs

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ACADEMIC AND RESEARCH BACKGROUND

1. **Post Doc Fellow** (2013 to 2014) **Institute of Industrial Mathematics,
Federal University do Paraná, Brazil**
2. **Ph.D** (July 2010) **Thesis Title:** Numerical Treatment of Some Partial Differential
Equations using Differential Quadrature Method
Department of Mathematics
Indian Institute of Technology Roorkee, India
3. **M.Sc.** (2003-2005) Kurukshetra University, Kurukshetra, India

PH.D. STUDENTS

- | | |
|-------------------------------|--------------------------------------|
| 1. Mr. Vikas Kumar | Awarded 2014 |
| 2. Ms. Anjali Verma | Awarded 2015 |
| 3. Ms. Suman Sheoran | Work under progress since Jan, 2013 |
| 4. Ms. Sunita Garhwal | Work under progress since Jan, 2014 |
| 5. Mr Om Prakash Yadav | Work under progress since Jan, 2015 |
| 6. Mr Sanjay Kumar | Work under progress since July, 2016 |

MASTER THESIS

1. **Ms. Aanchal Chopra** (Numerical solutions of Some Nonlinear PDEs using FEM, 2012)
2. **Ms. Rishu Singla** (Numerical solutions of Some Nonlinear PDEs using FDM, 2012)
3. **Ms. Harwinder Kaur** (Numerical solutions of Some Differential equations using B-Spline, 2012)
4. **Ms. Mandeep Kaur** (Numerical Solutions of Some Parabolic Partial Differential Equations Using Cubic B-Spline Collocation Method, 2013)

5. **Ms. Ramandeep Kaur** (Numerical Solutions and Stability of Some Partial Differential Equations Using Finite Difference Methods, 2013)
6. **Ms. Jyoti Sharma** (Exact Solutions of Some Partial Differential Equations Using (G'/G) -Expansion Method)

LIST OF PUBLICATIONS

□□Articles published/accepted in refereed journals

1. **Ram Jiwari**, H. S. Shukla, M Tamsir and VK Srivastava, A numerical algorithm for computation modeling of 3D nonlinear wave equations based on exponential modified cubic B-spline differential quadrature method, *International Journal of Computer Mathematics*, (2017) <http://dx.doi.org/10.1080/00207160.2017.1296573>.
2. Maria A. De Rosaa, Maria Lippiello, **Ram Jiwari**, Stefania Tomasiello, A Differential Quadrature based procedure for parameter identification, **Applied Mathematics and Computation**, 290 (2016) 460-466.
3. M. Tamsir, V. K. Srivastava, **Ram Jiwari**, An algorithm based on exponential modified cubic B-spline differential quadrature method for nonlinear Burgers' equation, **Applied Mathematics and Computation**, 290 (2016) 111-124.
4. S. Garhwal and **Ram Jiwari**, Conversion of fuzzy automata into fuzzy regular expressions using transitive closure, **Journal of Intelligent & Fuzzy Systems**, 30 (6) (2016) 3123-3129.
5. S. Garhwal and **Ram Jiwari**, Parallel fuzzy regular expression and its conversion to epsilon-free fuzzy automaton, **The Computer Journal**, 59(9) (2016) 1383-1391.
6. A Verma, **Ram Jiwari**, Cosine expansion based differential quadrature algorithm for numerical simulation of two dimensional hyperbolic equations with variable coefficients, **International Journal of Numerical Methods for Heat & Fluid Flow**, 25 (7) (2015) 1574-1589.
7. **Ram Jiwari**, Lagrange interpolation and modified cubic B-spline differential quadrature methods for solving hyperbolic partial differential equations with Dirichlet and Neumann boundary conditions, **Computer Physics Communications**, 193 (2015) 55-65.
8. **Ram Jiwari**, A hybrid numerical scheme for the numerical solution of the Burgers' equation, **Computer Physics Communications**, 188 (2015) 59-67.
9. Vikas Kumar, **Ram Jiwari** and R K Gupta, Exact and numerical solutions of coupled short pulse equation with time-dependent coefficients, **Nonlinear Dynamics**, 79 (1)(2015) 455-464.
10. Anjali Verma, **Ram Jiwari** and M. E. Koksai, Analytic and numerical solutions of nonlinear diffusion equations via symmetry reductions, **Advances in Difference Equations**, DOI:10.1186/1687-1847-2014-229 (2014).
11. **Ram Jiwari**, R.K. Gupta and Vikas Kumar, Polynomial differential quadrature method for numerical solutions of the generalized Fitzhugh-Nagumo equation with time-dependent coefficients, **Ain Shams Engineering Journal**, 5 (2014) 1343-1350.
12. Anjali Verma, **Ram Jiwari** and Satish Kumar, A numerical scheme based on differential quadrature method for numerical simulation of nonlinear Klein-Gordon equation, **International Journal of Numerical Methods for Heat and Fluid Flow**, 24 (7) (2014) 1390-1404.

13. **Ram Jiwari** and Jinyun Yuan, A computational modeling of two dimensional reaction-diffusion Brusselator system arising in chemical processes, **Journal of Mathematical Chemistry**, **52** (2014) 1535-1551.
14. Vikas Kumar, **Ram Jiwari** and R K Gupta, Lie Group analysis, numerical and non-traveling wave solutions for the (2+1)-dimensional Diffusion–Advection equation with variable coefficient, **Chinese Physics B**, **23** (3) (2014) 030201.
15. Vikas Kumar, **Ram Jiwari** and R K Gupta, Numerical Simulation of Two Dimensional Quasilinear Hyperbolic Equations by Polynomial Differential Quadrature Method, **Engineering Computations**, **30** (7) 2013, 892-909.
16. Vikas Kumar, **Ram Jiwari** and R K Gupta, Painlevé Analysis, Lie Symmetries and Exact Solutions for Variable Coefficients Benjamin-Bona-Mahony-Burger (BBMB) Equation, **Communications in Theoretical Physics**, **60** (2013) 175–182.
17. Vikas Kumar, **Ram Jiwari** and R K Gupta, Comparative Study of Travelling Wave and Numerical Solutions for the Coupled Short Pulse (CSP) Equation, **Chinese Physics B**, **22** (5) (2013) 050201.
18. **Ram Jiwari**, R.C. Mittal and K K Sharma, A numerical scheme based on weighted average differential quadrature method for the numerical solution of Burgers' equation, **Applied Mathematics and Computation**, **219** (2013) 6680–6691.
19. R C Mittal, **Ram Jiwari** and K K Sharma, A numerical scheme based on differential quadrature method to solve time dependent Burgers' equation, **Engineering Computations**, **30** (1) (2013) 117-131.
20. **Ram Jiwari**, Haar wavelet quasilinearization approach for numerical simulation of Burgers' equation, **Computer Physics Communications**, **183** (2012) 2413-2423.
21. R.C. Mittal and **Ram Jiwari**, A differential quadrature method for solving Burgers'-type equation, **International Journal of Numerical Methods for Heat and Fluid Flow**, **22** (7), (2012), 880-895.
22. **Ram Jiwari**, S. Pandit and R C Mittal, Numerical simulation of two-dimensional sine-Gordon solitons by differential quadrature method, **Computer Physics Communications**, **183** (2012) 600-616.
23. **Ram Jiwari**, S. Pandit and R C Mittal, A Differential Quadrature Algorithm to Solve the Two Dimensional Linear Hyperbolic Telegraph Equation with Diriclet and Neumann Boundary Conditions, **Applied Mathematics and Computation**, **218** (2012) 7279–7294.
24. R.C. Mittal and **Ram Jiwari**, Differential Quadrature Method for Numerical Solution of coupled viscous Burgers' equations, **Int. J. for Comput. Methods in Eng. Science and Mech**, **13** (2012), 1-5.
25. D. Sharma, **Ram Jiwari**, and Sheo Kumar, A comparative study of Modal matrix and finite elements methods for two point boundary value problems, **Int. J. of Appl. Math. and Mech.** **8** (13) (2012), 29-45.
26. **Ram Jiwari**, Sapna Pandit and R C Mittal, A differential quadrature algorithm for the Numerical Solution of the Second-Order One dimensional Hyperbolic Telegraph Equation, **Int J of Nonlinear Sciences**, **13** (3) (2012), 259-266.
27. **Ram Jiwari**, Dinkar Shrma and Sheo Kumar, Numerical solutions of two point boundary value problems using Galerkin-Finite element method, **Int J of Nonlinear Sciences**, **13** (2)(2012), 204-210.
28. R.C. Mittal and **Ram Jiwari**, A Numerical Scheme for singularly perturbed Burger-Huxley Equation, **J. Appl. Math. & Informatics**, **29** (2011), No. 3-4, 813-829.

29. R.C. Mittal and **Ram Jiwari**, A Numerical Scheme for Some Nonlinear Differential Equations Models in Biology, **Int. J. for Comput. Methods in Eng. Science and Mech.**, **12 (3)**, (2011), 134-140.
30. R.C. Mittal and **Ram Jiwari**, Numerical Study of Two-Dimensional Reaction-Diffusion Brusselator System, **Appl. Math. Comput.**, **217 (12)** (2011), 5404-5415.
31. **Ram Jiwari**, Dinkar Shrma and Sheo Kumar, Galerkin-Finite Element Method for the numerical solution of Advection-Diffusion equation, **IJPAM**, **70 (3)** (2011), 389-399.
32. R.C. Mittal and **Ram Jiwari**, Numerical Study of Burger-Huxley Equation by Differential Quadrature Method, **Int. J. of Appl. Math. and Mech.**, **5(8)** (2009), 1-9.
33. R.C. Mittal and **Ram Jiwari**, Differential Quadrature Method for Two Dimensional Burgers' Equations, **Int. J. for Comput. Methods in Eng. Science and Mech**, **10** (2009), 450-459.
34. R.C. Mittal and **Ram Jiwari**, A Spectral Method for Suspension Bridge Model, **Int. J. of Appl. Math. and Mech.**, **5(5)** (2009), 66-75.
35. R.C. Mittal and **Ram Jiwari**, Numerical Study of Fisher's Equation by using Differential Quadrature Method, **Int. J. Information and systems Sciences**, **5(1)**(2008), 143-160.
36. A Spectral method for the solution of a fourth order integro-differential equation, **IX International Scientific Conference "Science and Education" (28-29 March, 2012) Kemerovo State University, Belovo Institute, Russia**, pp. 119-124.

□ □ COMMUNICATED IN REFERED JOURNALS

1. **Ram, Jiwari**, Sapna Pandit and M. E. Koksai, New B-splines Collocation Algorithms for Solving Nonlinear Parabolic Partial Differential Equations with Dirichlet and Neumann Boundary Conditions, (**Communicated**).
2. **Ram Jiwari** and R.C. Mittal, A Comparison of two numerical schemes for the solution of time dependent Burgers-Huxley Equation, (**Communicated**).
3. **Ram Jiwari**, Numerical solution of singularly perturbed boundary value problems using uniform Haar wavelet, (**Communicated**).
4. Vikas Kumar, **Ram Jiwari** and R K Gupta, Lie Group Analysis, Exact and Numerical Solutions of Variable Coefficients Coupled KdV–Burgers equation (**Communicated**).

AWARDS

1. **Fundação para a Ciência e a Tecnologia (FCT), Fellowship of Portugal**, 2011
2. Cleared National Eligibility Test (**NET**) for **Junior Research Fellowship and Lectureship** award conducted by Council of Scientific and Industrial Research (CSIR), **2005**.
3. Qualified Graduate Aptitude Test in Engineering (**GATE-AIR-38**), 2011.
4. Qualified **NBHM** Exam for PH.D fellowship, **2006**

TEACHING /RESEARCH EXPERIENCE

1. **Assistant Professor, Indian Institute of Technology Roorkee, India** (03 June, 2014 Ongoing)
2. **Assistant Professor, Thapar University Patiala, India** (April, 2014 to June, 2014)
3. **Post Doc Fellow, Federal University do Paraná, Brazil** (9th Sept. 2013 to March, 2014)
4. **Thapar University Patiala** (19 May, 2011 to 8 Sept, 2013)
5. **Dr B R Ambedkar National Institute of Technology Jalandhar, India** (July, 2010 to 18 May, 2011)

WORKSHOP/CONFERENCES ATTENDED

1. **New Frontiers in Numerical Analysis and Scientific Computing** (17-18 April, 2013)
Conference held at **Kent State University, USA (Paper Presented).**
2. **NUMDIFF-13 (Sept 2012)** Conference & Symposium held at **Martin-Luther University, Halle, GERMANY.**
3. Workshop on **FEM** held at **TIFR CAM Bangalore** from 2 July to 13 July, 2012
4. Workshop **WMMFA on wavelets** held at **IIT Bombay** March 2012
5. Workshop on **Differential Equations and Mathematical Modelling**, held at **Delhi University**, 9 to 11 Feb, 2012.
6. **Symposium** held at **TIFR CAM Bangalore** Jan 2011.
7. One month School organized by **NBHM at Panjab University Chandigarh** Dec 2008.
8. **Symposium** held at **IISC Bangalore** 2008.
9. **NUMDIFF-12 (2009)** Conference & Symposium held at **Martin-Luther University, Halle, GERMANY.**
10. **IAWS-CFD Workshop and Conference** held at **IIT Roorkee**, Roorkee, 2006

REVIEWER OF REFERED JOURNALS

1. **Computer Physics Communications (Elsevier)**
2. **Mathematical Methods in the Applied Sciences (Wiley Publication)**
3. **Applied Mathematical Modelling (Elsevier)**
4. **Applied Mathematical and Computation (Elsevier)**
5. **Computers and Mathematics with Applications (Elsevier)**
6. **Neural Computing and Applications (Springer)**
7. **Nonlinear Dynamics (Springer)**
8. **Engineering Computations (Emerald)**
9. **International Journal of Numerical Methods for Heat and Fluid Flow (Emerald)**
10. **International Journal of Nonlinear Science**

REFERENCES

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3. Prof N. Sukavanam

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