

**DEPARTMENT OF MATHEMATICS & STATISTICS
KANYA GURUKUL CAMPUS, HARDWAR**

Seema Sharma
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RESUME

Areas of Interest

- Theory of Vibration, Numerical Techniques, Applied Mathematics, Fluid Dynamics, Operations Research, Reliability

Educational Details

Degree	University	Subject
Ph.D.	I.I.T. Roorkee	Mathematics
M.Phil.	University of Roorkee	Computer Applications
M.Sc.	University of Roorkee	Applied Mathematics
B.Sc.	Meerut University	Physics, Chemistry, Mathematics

Professional Background

Duration	Position	Organization
27.03.2013 till date	Professor	Gurukul Kangri University Hardwar
27.03.2010-26.03.2013	Associate Professor	Gurukul Kangri University Hardwar
27.03.2007-26.03.2010	Reader	Gurukul Kangri University Hardwar
27.03.2002-26.03.2007	Sr. Lecturer	Gurukul Kangri University Hardwar
7.1.1999-26.03.2002	Lecturer	Gurukul Kangri University Hardwar
27.3.1997-6.1.1999	Lecturer	N.I.T. Jalandhar
27.8.1996-26.3.1996	System Programmer	R.E.C. Kurukshetra
22.11.1991-26.8.1996	Programme Assistant	Kurukshetra University Kurukshetra

Administrative Background

From	To	Designation
1999	till date	Incharge, Deptt. of Mathematics, K.G.C. Hardwar
1999	till date	Incharge, Computer Centre, K.G.C. Hardwar

Memberships

- Indian Mathematical Society, Life member
- International Academy of Physical Sciences, Life Member

Teaching Engagements

Title/Topics

Programming in C++, Measure Theory, Abstract Algebra, Operations Research, Advanced Numerical Analysis, Complex Analysis, Programming in MATLAB

Ph.D. Awarded

- | | |
|--|--------------------|
| • Free Vibration Analysis of Non-uniform Composite Plates | Prag Singhal |
| • Vibration Studies of Elastic Plates of Variable Thickness | Shivani Srivastava |
| • Numerical Solution of Some Problems on Vibration of Plates | Neelam |
| • Some Stability Problems of Non-Newtonian Fluids | Kapil Kumar |
| • Development of Some Inventory Models with Dynamic Demand and Shortages | Sanjay Singh |

Publications in Refereed Journals / Conference Proceedings

2019-20

1. Sapna Pandit and Seema Sharma, Wavelet strategy for flow and heat transfer in CNT-water based fluid with asymmetric variable rectangular porous channel, Engineering with Computers, 2020, doi.org/10.1007/s00366-020-01139-z. (EISSN 1435-5663, ISSN 0177-0667) (**Scopus, SCIE**)
2. Mithilesh Singh, Seema Sharma, Sunil Rawan, Solution of Linear Differential Equations using Operational Matrix of Bernoulli Orthonormal Polynomials, Poincare Journal of Analysis & Applications, Vol. 7(1), pp. 51-60, 2020. (EISSN 2349-6797, ISSN 2349-6789) (**Scopus**)

3. Ariba Arshad, R.C. Mittal, Seema Sharma, An efficient scheme for solution of two-dimensional Laplace's equation, AIJR Proceedings International Conference on Applied Mathematics & Computational Sciences (ICAMCS-2019) held at DIT University, Dehradun, Oct. 17-19, 2019, pp. 20-33, 2020. (ISSN 2582-3922, ISBN 978-81-942709-6-6 (eBook))
4. Sanjay Singh, Seema Sharma, S.R. Singh, Inventory model for deteriorating items with incremental holding cost under partial backlogging, International Journal of Mathematics in Operational Research, Vol. 15(1), pp. 110-126, 2019. (EISSN 1757-5869, ISSN 1757-5850) (**Scopus (Elsevier)**)

2018-19

5. Seema Sharma, Sanjay Singh, S.R. Singh, An inventory model for deteriorating items with expiry date and time varying holding cost, International Journal Procurement Management, Vol. 11(5), pp. 650-666, 2018. (EISSN 1753-8440, ISSN 1753-8432) (**Scopus (Elsevier)**)

2017-18

6. Sanjay Singh, Seema Sharma, S.R. Singh, Two-warehouse inventory model for deteriorating items with time dependent demand and partial backlogging under inflation, International Journal of Mathematical Modelling and Computations, Vol. 8(2), pp. 73-88, 2018. (EISSN 2228-6233)
7. Seema Sharma, R. Lal, Neelam Singh, Effect of non-homogeneity on asymmetric vibrations of non-uniform circular plates, Journal of Vibration and Control, Vol. 23(10), pp. 1635-1644, 2017. (ISSN 1077-5463) **Impact Factor : 2.169 (Scopus, SCIE, Thomson Reuters)**

2016-17

8. Kapil Kumar, V. Singh, Seema Sharma, Effect of horizontal magnetic field and horizontal rotation on thermosolutal stability of a dusty couple-stress fluid through a porous medium : a Brinkman model, Journal of Applied Fluid Mechanics, Vol. 10(2), pp. 681-692, 2017. (EISSN 1735-3645) **Impact Factor : 0.689 (Scopus, Thomson Reuters, SCIE)**
9. Sanjay Singh, S.R. Singh, Seema Sharma, A partially backlogged EPQ model with demand dependent production and non-instantaneous deterioration, International Journal of Mathematics in Operational Research, Vol. 10(2), pp. 211-228, 2017. (EISSN 1757-5869, ISSN 1757-5850) (**Scopus (Elsevier)**)
10. Sanjay Singh, Seema Sharma, S.R. Singh, Inventory model for deteriorating items with dynamic demand under partial backlogging, Proc. International Conference on Computer Systems and Mathematical Sciences, Institute of Technology and Science, Ghaziabad, pp. 115-119, Nov. 18-19, 2016. (ISBN: 978-81-928555-0-9)

11. Kapil Kumar, V. Singh, Seema Sharma, Effects of horizontal magnetic field and rotation on thermal instability of a couple-stress fluid through a porous medium : a Brinkman model, *Journal of Applied Fluid Mechanics*, Vol. 9(4), pp. 1799-1806, 2016. (EISSN 1735-3645) **Impact Factor : 0.689 (Scopus, Thomson Reuters, SCIE)**

2015-16

12. S.R. Singh, Seema Sharma, Sanjay Singh, Inventory model with multivariate demands in different phases with customer returns and inflation, *International Journal of Mathematics in Operational Research*, Vol. 8(4), pp. 477-489, 2016. (ISSN 1757-5869) (**Scopus (Elsevier)**)
13. U.S. Gupta, Seema Sharma, Prag Singhal, DQM modeling of rectangular plate resting on two parameter foundation, *Engineering Solid Mechanics*, Vol. 4(1), pp. 33-44, 2016. (ISSN 2291-8752) (**Scopus**)
14. Kapil Kumar, V. Singh, Seema Sharma, Linear stability analysis for ferromagnetic fluids in the presence of magnetic field, compressibility, internal heat source and rotation through a porous medium, *Journal of Theoretical and Applied Mechanics*, Vol. 53(4), pp. 1067-1081, 2015. (ISSN 1429-2955) **Impact Factor: 0.831 (SCIE(SciSearch), JCR/Sci Edition, Thomson Reuters)**
15. S. Srivastava, Seema Sharma, R. Lal, Effect of foundation and non-homogeneity on vibrations of polar orthotropic parabolically tapered circular plates, *Applied Mathematics*, Vol. 6(9), pp. 1563-1573, 2015. (ISSN 2152-7393)
16. Kapil Kumar, V. Singh, Seema Sharma, Magneto-thermal stability of rotating Walters' (model B') viscoelastic compressible fluid in presence of Hall current and suspended particles in porous medium, *Journal of Applied Fluid Mechanics*, Vol. 8(3), pp. 419-427, 2015. (EISSN 1735-3645) **Impact Factor : 0. 689 (Scopus, Thomson Reuters, SCIE)**

2014-15

17. U.S. Gupta, Seema Sharma, Prag Singhal, Vibration analysis of non-homogeneous rectangular orthotropic plates, *JMEST*, Vol. 2(1), pp. 202-211, 2015. (ISSN 2458-9403)
18. Kapil Kumar, V. Singh, Seema Sharma, On the onset of convection in a dusty couple-stress fluid with variable gravity through a porous medium in hydromagnetics, *Journal of Applied Fluid Mechanics*, Vol. 8(1), pp. 55-63, 2015. (EISSN 1735-3645) **Impact Factor : 0.689 (Scopus, Thomson Reuters, SCIE)**
19. Kapil Kumar, V. Singh, Seema Sharma, Thermo-magnetic convection in a rotating couple-stress fluid through a Brinkman porous medium, *International Journal of Applied Mathematics and Mechanics*, Vol. 10(8), pp. 78-93, 2014. (ISSN 0973-0184)
20. Kapil Kumar, V. Singh, Seema Sharma, Magneto-rotational convection for ferromagnetic fluids in the presence of compressibility and heat source through a porous medium, *Special Topics & Reviews in Porous Media*, Vol. 5(4), pp. 311-323, 2014. (ISSN 2151-4798) (**Scopus**)

2013-14

21. U.S. Gupta, Seema Sharma, Prag Singhal, Effect of two – parameter foundation on free transverse vibration of non-homogeneous orthotropic rectangular plate of linearly varying thickness', International Journal of Engineering & Applied Sciences, Vol. 6(2), pp. 32-51, 2014. (ISSN 1309-7997)

2012-13

22. Kapil Kumar, V. Singh, Seema Sharma, Magneto-hydrodynamic thermal instability of Walters' B' fluid under the effects of rotation, variable gravity field and suspended particles in a Brinkman porous medium, American Journal of Fluid Dynamics, Vol. 3(2), pp. 31-39, 2013. (ISSN 2168-4707)
23. Kapil Kumar, V. Singh, Seema Sharma, Stability of an Oldroydian viscoelastic fluid permeated with suspended particles through a Brinkman porous medium with variable gravity field in hydromagnetics, American Journal of Fluid Dynamics, Vol. 3(3), pp. 58-66, 2013. (ISSN 2168-4707)
24. Seema Sharma, U.S. Gupta, Prag Singhal, Vibration analysis of non-homogeneous orthotropic rectangular plates of variable thickness resting on Winkler foundation, Journal of Applied Science and Engineering, Vol. 15(3), pp. 291-300, 2012. (ISSN 1560-6686) (**Scopus**)
25. Seema Sharma, R. Lal, S. Srivastava, Effect of Pasternak foundation on axisymmetric vibration of polar orthotropic non-homogeneous circular plate of variable thickness, International Journal of Computational Mathematics and Numerical Simulation, Vol. 5(1-2), pp. 151-163, 2012. (ISSN 0973-581X)
26. Seema Sharma, R. Lal, Neelam, Asymmetric vibrations of non-homogeneous circular plates of variable thickness, International Journal of Contemporary Mathematics, Vol. 3(1-2), pp. 127-135, 2012. (ISSN 0973-6298)
27. U.S. Gupta, Seema Sharma, Prag Singhal, Numerical simulation of vibration of non-homogeneous plates of variable thickness, International Journal of Engineering & Applied Sciences, Vol. 4(4), pp. 26-40, 2012. (ISSN 1309-7997)

2011-12

28. Seema Sharma, U.S. Gupta, Prag Singhal, Effect of varying in-plane forces on vibration of orthotropic rectangular plates resting on Pasternak foundation, International Journal of Advances in Engineering Research, Vol. 2(III), pp. 36-45, 2011. (ISSN 2231-5152)
29. Seema Sharma, S. Srivastava, R. Lal, Free vibration analysis of circular plates of variable thickness resting on Pasternak foundation, Journal of International Academy of Physical Sciences, Vol.15, pp. 161-174, 2011. (ISSN 0974-9373)
30. Seema Sharma, R. Lal, Neelam, Free transverse vibrations of non-homogeneous circular plates of linearly varying thickness, Journal of International Academy of Physical Sciences, Vol. 15, pp. 187-200, 2011. (ISSN 0974-9373)

2010-11

31. Seema Sharma, U.S. Gupta, R. Lal, Effect of Pasternak foundation on axisymmetric vibration of polar orthotropic annular plates of varying thickness, ASME J. of Vibration and Acoustics, Vol. 132(4), pp.1-13, 2010. (ISSN 1048-9002) **Impact Factor 2.343 (Thomson Reuters, Scopus, SCIE/web of science)**

2006-2007

32. U.S. Gupta, R. Lal, Seema Sharma, Vibration of non-homogenous circular Mindlin plates with variable thickness, Journal of Sound and Vibration, Vol. 302(1-2), pp. 1-17, 2007. (ISSN 0022-460X) **Impact Factor 3.429 (Scopus, SCI, Thomson Reuters)**
33. U.S. Gupta, R. Lal, Seema Sharma, Thermal effect on axisymmetric vibrations of non-uniform polar orthotropic circular plates with elastically restrained edges, Proc. of International Congress on Computational Mechanics and Simulations (ICCMS – 06), IIT, Guwahati, Vol. I, pp. 562-568, Dec. 8-10, 2006.
34. U.S. Gupta, R. Lal, Seema Sharma, Vibration analysis of non-homogenous circular plate of non-linear thickness variation by differential quadrature method, Journal of Sound and Vibration, Vol. 298(4-5), pp. 892-906, 2006. (ISSN 0022-460X) **Impact Factor 3.429 (Scopus, SCI, Thomson Reuters)**
35. U.S. Gupta, A.H. Ansari, Seema Sharma, Buckling and vibration of polar orthotropic circular plate resting on Winkler foundation, Journal of Sound and Vibration, Vol. 297, pp. 457-476, 2006. (ISSN 0022-460X) **Impact Factor 3.429 (Scopus, SCI, Thomson Reuters)**

2004-2005

36. R. Lal, U.S. Gupta, Seema Sharma, Axisymmetric vibrations of non-homogenous annular plate of quadratically varying thickness, Proc. of International Conference on Advances in Applied Mathematics (ICAAM-05), Gulbarga University, Gulbarga, pp. 167-181, Feb. 24-26, 2005.

2003-2004

37. R. Lal, U.S. Gupta, Seema Sharma, Axisymmetric vibrations of non-homogenous polar orthotropic annular plate of variable thickness resting on an elastic foundation, Proc. of XIII National Conference of Indian Society of Mechanical Engineers, I.I.T. Roorkee, Roorkee, pp. MD-074, Dec. 30-31, 2003.

2001-2002

38. Seema Sharma, Flood forecasting using Marquardt algorithm : An optimisation technique, Proc. of International Conference on Optimisation Techniques and its Applications in Engineering and Technology, Agra, Sept. 22-23, 2001.

2000-2001

39. Sheo Kumar, Seema Sharma, Recurrence relation for quadrature formulas of Cauchy principal value integrals of oscillatory kind, Advances in Modelling and Analysis A, General, Mathematical and Computer Tools, Vol. 37(1-2), pp. 51-56, 2000. (ISSN 1258-5769) **(Scopus)**

1994-1995

40. P.K. Suri, Seema Sharma, Software package for character manipulation in SINTRAN environment, The Journal of the Institution of Engineers (India), Computer Engineering Division, Vol. 75, CP 2, pp. 58-60, 1994. (ISSN 0971 0469) (Scopus)

Paper Presentation in Conferences

1. 'Effect of Pasternak Foundation on Axisymmetric Vibration of Polar Orthotropic Non-homogeneous Circular Plate of Variable Thickness', International Conference on Mathematics and Mathematical Sciences organized by Serials Publications, New Delhi from July 7-8, 2012.
2. 'Role of a Teacher in Imparting Value Education in Technical Institutions', International Conference on Role and Responsibilities of Humanities and Social Sciences in Technical Education held at SRM Univ. NCR Campus, Ghaziabad from March 16-17, 2012.
3. 'Free Vibration Analysis of Circular Plates of Variable Thickness resting on Pasternak Foundation', 13th International Conference of the International Academy of Physical Sciences held at Univ. of Petroleum & Energy Studies, Dehradun from June 11-13, 2011.
4. 'Differential Quadrature Method for Axisymmetric Vibration of Non-homogeneous Circular Plate resting on an Elastic Foundation', National Conference on Recent Developments in Engineering Mathematics and Information Technology held at PCE, Jaipur from December 25-26, 2009.
5. 'Axisymmetric Vibrations of Polar Orthotropic Annular Plate of Variable Thickness Resting on Pasternak Foundation', 71st Annual Conference of Indian Mathematical Society held at I.I.T. Roorkee from Dec. 26-29, 2005.
6. 'Axisymmetric Vibrations of Non-homogenous Annular Plate of Quadratically Varying Thickness', International Conference on Advances in Applied Mathematics (ICAAM-05) held at Gulbarga University, Gulbarga from Feb. 24-26, 2005.
7. 'Axisymmetric Vibrations of Non-homogenous Polar Orthotropic Annular Plate of Variable Thickness Resting on an Elastic Foundation', XIII National Conference of Indian Society of Mechanical Engineers held at I.I.T. Roorkee, Roorkee from Dec. 30-31, 2003.
8. 'Flood Forecasting Using Marquardt Algorithm: An Optimisation Technique', International Conference on Optimisation Techniques and its Applications in Engineering and Technology held at R.B.S. College, Agra from Sept. 22-23, 2001.