

Research Publications (2018-23)

- S. Kumar, S.K. Dhiman and **Astha Chauhan**, “Analysis of Lie Invariance, Analytical Solutions. Conservation Laws, and a Variety of Wave Profiles for the (2+1)-Dimensional Riemann Wave Model Arising From Ocean Tsunamis and Seismic Sea Waves”, The European Physical Journal Plus, 138(7), 1-22, 2023, ISSN:2190-5444.
- S. Kumar, W. X. Ma, S.K. Dhiman, **Astha Chauhan**,” Lie Group Analysis with the Optimal System, Generalized Invariant Solutions, and an Enormous Variety of Different Wave Profiles for the Higher-Dimensional Modified Dispersive Water Wave System of Equations, European Physical Journal Plus, 138(5), 4342023, 2023, ISSN:2190-5444.
- Sushil Yadav, Mukesh Kumar, and **Virendra Kumar** “(R2033) Resonant curve due perturbations of Geosynchronous Satellite including effect of earths equatorial ellipticity” Applications and applied Mathematics: an international journal (AAM)1, (18) 2023: 1932-9466.
- **P. Mantry**, K.T. Poumai, S.K. Kaushik, Reconstruction of Multidimensional digital signals, International Journal of Wavelets, Multiresolution and Information Processing, Vol 21, No. 01, 2023, ISSN-0219- 6913.
- **Astha Chauhan** and Rajan Arora, “Application of Homotopy Analysis Method (HAM) to the Non-Linear KdV equations”, Communication in Mathematics, 1-12, 31, 2022, ISSN: 1804-1388.
- **Astha Chauhan**, “Shock waves propagation in a non-ideal rotating medium with azimuthal magnetic field effect using Lie group technique”, Physics of Fluids, 34, 017101, 2022, ISSN: 10706631.
- **Astha Chauhan**, Ashish Tiwari, Kajal Sharma and Rajan Arora, Steepening of Waves in a Non-Ideal Radiative Magnetogasdynamics with Dust Particles, Pramana-A Journal of Physics, 96, 139,2022, ISSN: 0304-4289.
- **Astha Chauhan** and Rajan Arora, “Invariance analysis and some new exact analytic solutions of the time-fractional coupled Drinfeld-Sokolov-Wilson

equations”, *Communication in Mathematics*, 30(1), 63–80, 2022, ISSN: 1804-1388.

- Sachin Kumar, Shubham Kumar Dhiman and **Astha Chauhan**, “Symmetry reductions, generalized solutions and dynamics of wave profiles for the (2+1)-dimensional system of Broer-Kaup-Kupershmidt (BKK) equations”, *Mathematics and Computers in Simulation*, 196, 319-335, 2022, ISSN: 0378-4754.
- Ajay Kumar and **Jyoti Sharma**, Uncertainty Principles on nilpotent Lie groups, *Khayyam J. Math.* 8(2022), no. 2, 143-162.
- **Dhaka, V.**, Nijhawan, N. Effect of change in environment on reliability growth modelling integrating fault reduction factor and change point: a general approach, *Ann Oper Res (2022) Special Issue*, ISSN-1572-9338.
- N Nijhawan, **V. Dhaka**, Software Reliability Modelling and Assessment Integrating Time Dependent Fault Reduction Factor in Random Environment, *Optimization Models in Software Reliability*, 135-158, 2022.
- Sushil Yadav, **Virendra Kumar**, Rajiv Aggarwal, Effect of Earth’s Equatorial Ellipticity on the Resonant Curve and Phase Portrait of Geo-centric satellite under the Gravitational effect of the Earth-Moon-Sun system by using Unperturbed Solution, *Few Body System*, 63, pp 41, 2022.
- Sushil Yadav, **Virendra Kumar**, Mukesh Kumar, Analysis of resonant curves and phase portrait in the earth-moon system by using its unperturbed solution and earth’s equatorial ellipticity, *New Astronomy*, 92 (2022).
- Sushil Yadav, **Virendra Kumar** & Rajiv Aggarwal, Resonant curves of geo-centric satellite under the gravitational effect of the Earth-Moon-Sun system including Earth’s equatorial ellipticity and resistive force using unperturbed solutions. *Advances in Space Research*, 70(11), 3340-3361, 2022.
- Sushil Yadav, Mukesh Kumar, & **Virendra Kumar**, Analysis of Resonant Curve and Phase Portrait Due to Earth’s Equatorial Ellipticity In the Earth-Moon System Using Perturbation Technique. *Journal of Dynamical Systems and Geometric Theories*, 20(2), 275-298, 2169-0057, 2022.
- S. K. Singh, **Jyoti Sharma**, Generalized slant Toeplitz operators on the derivative Hardy space $S_2(D)$, *Ann. Funct. Anal.* 13, 21 (2022).

- Praveen Deora, **Umesh Kumari**, D.C. Sharma, Cost Analysis and Optimization of Machine Repair Model with Working Vacation, and feedback policy in International Journal of Applied and Computational Mathematics 7, Article number: 250 (2021).
- **Umesh Kumari**, D.C. Sharma, Performance Analysis of a Machine Repair Problem with Warm Standbys, Servers Vacation and Controlling F in Mathematics in Engineering, Science and Aerospace Vol. 12, No. 2, pp. 1-21, 2021.
- **Astha Chauhan** and Kajal Sharma, "One-Dimensional Spherical Shock Waves in an Interstellar Dusty Gas Clouds", Zeitschrift fur Naturforschung A (ZNA), DOI:10.1515/zna2020-0210, 2021, ISSN: 1865-7109.
- Shalini Yadav, **Astha Chauhan** and Rajan Arora, "Invariance Analysis, Optimal System and Conservation Laws of the (2+1)-Dimensional Non-Linear Vakhnekho Equation", Pramana-A Journal of Physics, Volume 98(8), Pages 1-13, 2021, ISSN: 0304-4289.
- **Jyoti Sharma** and Ajay Kumar "Continuous abstract Wavelet transform on Homogeneous Spaces" Georgian Mathematical Journal, Vol 28, no. 5, 2021, pp. 805-818.
- Sushil Yadav, Mukesh Kumar, **Virendra Kumar**, Resonant curve of geo-synchronous satellite including effect of earth's equatorial ellipticity and resistive force using perturbations technique, New Astronomy, 86 (2021).
- **Jyoti Sharma** and Shivam Kumar Singh, Clifford Valued Shearlet Transform. *Adv. Appl. Clifford Algebras* **30** (2020), Paper no. 38, pp 16.
- **Astha Chauhan** and Rajan Arora, "Solution of the Riemann Problem for an Ideal Polytropic Dusty Gas in Magnetogas dynamics", Zeitschrift fur Naturforschung A (ZNA), Volume 75(6), 511-522, 2020, ISSN: 1865-7109.
- **Umesh Kumari**, D.C. Sharma, Optimal parameter selection for a machine repair system with servers' vacation and controlling f-policy in Jordan Journal of Mathematics and Statistics (JJMS) (2020) (JJMS) 12(4), 2020, pp 625 – 642.
- **Astha Chauhan**, Kajal Sharma, Rajan Arora and Deepika Singh, "Similarity Solutions for the Strong Shock Waves in Magnetogas dynamics with the Effect of Monochromatic Radiation", The European Physical Journal Plus, (Springer), 135(9), 1-17, 2020, ISSN: 2190-5444.

- **Astha Chauhan**, Kajal Sharma and Rajan Arora, "Lie Symmetry Analysis, Optimal System and Generalized Group Invariant Solutions of the (2+1)-Dimensional Date-Jimbo-Kashiwara Miwa Equations", *Mathematical Methods in the Applied Sciences* (John Wiley and Sons), Volume 43, 8823-8840, 2020, ISSN: 0999-1476.
- **Astha Chauhan** and Rajan Arora, "Self-similar Solutions of Cylindrical Shock Wave in a Dusty Gas", *Indian Journal of Physics* (Springer), Volume 93, Pages 665–673, 2020, ISSN: 0973-1458.
- Kajal Sharma, Rajan Arora and **Astha Chauhan**, "Invariance Analysis, Exact Solutions and Conservation Laws of (2+1)-Dimensional Dispersive Long Wave Equations", *Physica Scripta* (IOP Science), Volume 3, 055207, 2020, ISSN: 0031-8949.
- Kajal Sharma, Rajan Arora, **Astha Chauhan** and Ashish Tiwari, "Propagation of Waves in a Non-Ideal Magnetogasdynamics with Dust Particles", *Zeitschrift fur Naturforschung A (ZNA)*, Volume 75(3), 193-200, 2020, ISSN: 1865-7109.
- Kajal Sharma, **Astha Chauhan** and Rajan Arora, "Steepening of Waves in Non-Ideal Reacting Gas with Dust Particles", *Indian Journal of Physics*, (Springer), DOI/10.1007/s12648- 020-01861-w, 2020, ISSN: 0973-1458.
- Mayank Singh, **Astha Chauhan**, Kajal Sharma and Rajan Arora, "Kinematics of Spherical Shock Waves in an Interstellar van der Waals Gas Clouds", *Physics of Fluids*, Volume 32(10), 107109, 2020, ISSN: 10706631
- Kajal Sharma, **Astha Chauhan** and Rajan Arora, "Ionizing Blast Waves in a Non-Ideal Gas under Isothermal Flow Condition: Power Series Method", *Physica Scripta*, (IOP Science), DOI/10.1088/1402-4896/abca5c, 2020, ISSN: 0031-8949.
- **Astha Chauhan** and Rajan Arora, "Some Exact Solutions of (1+1)-Dimensional Kaup System and Seventh-Order Kawahara Equation", (*Malaya Journal of Matematik*), Volume 8, No. 1, 151-158, 2020, ISSN: 2319-3786.
- Ashish Bansal, Ajay Kumar and **Jyoti Sharma**, Hardy's theorem for Gabor transform. *J. Aust. Math. Soc.* 106 (2019), no. 2, 143--159.
- **Astha Chauhan** and Rajan Arora, "Time Fractional Kupershmidt Equation: Symmetry Analysis and Explicit Series Solution with Convergence Analysis",

Communication in Mathematics, Volume 27, Pages 171-185, 2019, ISSN:1804-1388.

- **Astha Chauhan** and Rajan Arora, “Similarity Solutions of Strong Shock Waves for Isothermal Flow in an Ideal Gas”, International Journal of Mathematical Engineering and Management Sciences, 2019, Volume 4, Pages 1094–1107.
- **Astha Chauhan**, Rajan Arora and Mohd. Junaid Siddiqui, “Propagation of Blast waves in a Non-Ideal Magnetogasdynamics”, Symmetry (MDPI), 2019, Volume 11(4), Pages 458(1-13), ISSN: 2073-8994 (SCI).
- Rajan Arora and **Astha Chauhan**, “Lie Symmetry Analysis and Some Exact Solutions of (2+1)-dimensional KdV-Burgers Equation”, International Journal of Applied and Computational Mathematics (Springer), Volume 5:15, No. 1, 2019, 1-13, ISSN 2199-5796
- **Astha Chauhan** and Rajan Arora, “Similarity Solutions of Spherical Shock Waves in a Self-Gravitating Ideal Gas”, (In book: Advances in Applied Mathematical Analysis and Applications: River Publishers), 2019, ISBN:9781003337072.
- K.T. Poumai, S.K. Kaushik, **Poonam Mantry**, “Frame Based Reconstruction of Signals in Multirate Implementation”, Poincare Journal of Analysis and Applications, ISSN- 2349-6797, Vol (2019) (1), Special Issue (ICAM, Delhi), 31-51.
- K.T. Poumai, S.K. Kaushik, **Poonam Mantry**, “Weyl- Heisenberg frames and Balian-Low Theorem in $l_2(\mathbb{Z})$ ”, Journal of Mathematical Physics, ISSN- 0022-2488, Vol 60, 043507 (2019).
- S.K. Kaushik, **Poonam Mantry**, “Computability of frames in computable Hilbert spaces”, International Journal of Computer Mathematics: Computer Systems Theory, ISSN-2379-9927, Vol 4, 2019, 16-29.
- **Jyoti Sharma** and Ajay Kumar, Qualitative uncertainty principle for the

Gabor transform on certain locally compact groups. Adv. Pure Appl. Math. 9 (2018), no. 3, 205--220.

- N Nijhawan, AG Aggarwal, **V. Dhaka**, “An SRGM for Multi-Release Open Source Software System. International Journal of Innovation and Technology Management 15 (02), 1850011, 2018. ISSN: 0219-8770.
- AG Aggarwal, **V. Dhaka**, N Nijhawan, A. Tandon, “Reliability Growth Analysis for Multi-release open source software Systems with Change Point. System Performance and Management Analytics, 125-137, 2019. Print ISBN 978-981-10-7322-9.