

Department of Mathematics

Publications in Journals (Year wise)

Year 2021

- **Dixit A.**, Singhal S., Zeyauddin M., Model for Modified Holographic Ricci Dark Energy in Gravitation Theory of Branc Dicke, Walailak journal, vol. 18, No. 3, 2021.
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- **Gupta S.**, k-Steps Explicit Iterative Algorithms to Solve Generalized System of Nonlinear Mixed Variational Inequalities, PUJM, vol. 53, No. 2, 2021.
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- **Mishra A. K.** and **Sharma U. K.**, Wormhole models in R^2 gravity for $f(R, T)$ theory with a hybrid shape function, Canadian Journal of Physics, vol. 99, No. 6, 2021.
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- A. Sepehri, A. Pradhan and H. Amirhashchi, Removing the big rip singularity from anisotropic universe in super string theory, Canadian Journal of Physics, Vol. 93, pp. 1-6, 2015.
- A. Sepehri, F. Rahaman, A. Pradhan and I. H. Sardar, Emergence and expansion of cosmic space in BIonics system, Physics Letters B, Vol. 744, pp. 92-96, 2015.

- R. C. Gupta, A. Pradhan, and S. Gupta, Redefining heat and work in the right perspective of second-law-of-thermodynamics, *Infinite Energy*, <https://arxiv.org/pdf/physics/0604174>, 2015.
- J. K. Prajapat, D. Bansal, A. Singh, A. K. Mishra, Bounds on third Hankel determinant for close-to-convex functions. *Acta Universitatis Sapientiae, Mathematica*, Vol. 7, pp. 210–219, 2015.
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Session 2013-14 (July 2013- June 2014)

- H. Amirhashchi, D. S. Chouhan and A. Pradhan, Interacting and non-interacting two-fluid atmosphere for dark energy in FRW universe, *Electronic Journal of Theoretical Physics* Vol. 10, pp. 109-126, 2014.
- N. Ahmed and A. Pradhan, Bianchi type-V cosmology in $f(R,T)$ gravity with (T) , *International Journal of Theoretical Physics*, Vol. 53, pp. 289-306, 2014.
- H. Amirhashchi and A. Pradhan, Viscous dark energy and phantom field in Bianchi type I space-time, *Astrophysics and Space Science*, Vol. 351, pp. 59-65, 2014.
- R. Bali, A. Pradhan and A. Rai, String cosmological models in cylindrically symmetric inhomogeneous universe with electromagnetic field, *Prespacetime Journal*, Vol. 5, pp. 695-705, 2014.
- N. Bansal, V. K. Deolia, A. Bansal and P. Pathak, Performance evaluation of lsb technique for digital watermarking, *International Journal of Information & Computation Technology*, Vol. 4, pp. 1237-1244, 2014.
- C. Chawla, R. K. Mishra and A. Pradhan, A new class of accelerating cosmological models with variable G in Saez and Ballester theory of gravitation, *Romanian Journal of Physics*, Vol. 59, pp. 12-25, 2014.
- A. Pradhan, A. K. Pandey and R. K. Mishra, Bianchi type-I transit cosmological models with time dependent gravitational and cosmological constants, *Indian Journal of Physics*, Vol. 88, pp. 757-765, 2014.
- A. Pradhan, A. K. Singh and D.S. Chouhan, Anisotropic Bianchi type-V cosmology with perfect fluid and heat flow in Saez-Ballester theory of gravitation, *Palestine Journal of Mathematics*, Vol. 3, pp. 130-140, 2014.
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- A. Pradhan, A. S. Dubey and R. K. Khare, Accelerating bulk viscous LRS Bianchi-II string cosmological models in Saez-Ballester theory of gravitation, *Journal of Tensor Society*, Vol. 8, pp. 17-32, 2014.
- J. K. Prajapat, A. K. Mishra, Certain new subclass of close- to- convex functions, *Acta Universitatis Apulensis*, Vol. 38, pp. 263-271, 2014.
- B. Saha, V. Rikhvitsky and A. Pradhan, Bianchi Type-I cosmological models with time dependent gravitational and cosmological constants: an alternative approach, *Theoretical Physics*, 2014.
- A. Saraswat, MHD flow past an oscillating infinite vertical plate with variable temperature through porous media, *International Journal of Emerging Technologies in Computational and Applied Sciences*, Vol. 6, pp.370-371, 2013.

Session 2012-13 (July 2012- June 2013)

- P. Pathak and V. K. Dwivedi, Fuzzy based pricing models for old age insurance *International Journal of Fuzzy Logic Systems*, Vol. 3, pp. 47-54, 2013.

- J. K. Prajapat and A. K. Mishra, Sufficient conditions for certain subclasses of meromorphic multivalent functions, *Bulletin of Mathematical Analysis and Applications*, Vol. 5, pp 80-85, 2013.
- R. Saraswat, S. Agarwal and P. Pathak, Collective authentication of humanoid groups on the basis of fingerprint minutiae extraction and numerical mapping, *International Journal of Information & Computation Technology*, Vol. 3, pp. 205-208, 2013.
- A. Sharma and S. Banerjee, Optimal price markup policy for an inventory model with random price fluctuations and option for additional purchase, *International Journal of Production Economics*, Vol.146, pp. 620-633, 2013.
- A. Saraswat, Heat and mass transfer effects on flow past an oscillating infinite vertical plate with variable temperature through porous media, *Research Journal of Recent Sciences*, Vol. 2, pp. 316-321, 2013.
- A. Saraswat, Radiation and MHD flow a semi-infinite moving vertical plate with viscous dissipation, *International Journal of Scientific & Engineering Research*, Vol. 4, pp. 1-10, 2013.
- A. Saraswat, Heat and mass transfer on flow past an exponentially accelerated infinite vertical plate with variable temperature and mass diffusion through a porous medium, *International Journal of Engineering, Business and Enterprise Applications*, Vol. 4, pp. 79-87, 2013.

Session 2010-11 (July 2010- June 2011)

- S. Banerjee and A. Sharma, Inventory model for seasonal demand with option to change the market, *Computers and Industrial Engineerin*, Vol. 59, pp. 807 – 818, 2010.
- S. Banerjee and A. Sharma, Optimal procurement and pricing policies for inventory models with price and time dependent seasonal demand, *Mathematical and Computer Modelling*, Vol. 51, pp. 700-714, 2010.
- S. Kumar, P. Pathak, Fuzzy based bonus–Malus system for premium decision in car insurance, *International Review of Pure and Applied Mathematics*, Vol. 6, pp. 77-88, 2010.
- S. Kumar, P. Pathak, Cardio vascular health insurance using fuzzy approach, *International Review of Fuzzy Mathematics*, Vol. 5, pp. 25-39, 2010.
- S. Kumar and A. Dixit, Mathematical model for the effect of body acceleration on blood flow in time dependent stenotic artery, *International Journal of Operations Research and Optimization*, Vol. 1, pp.121-132, 2010.

Publications in Conference Proceedings

Session 2015-16 (July 2015- June 2016)

- N. Bansal, A. Bansal, V. K. Deolia and P. Pathak, Comparative analysis of digital watermarking techniques, In the proceedings of the International Congress on Information and Communication Technology, Springer Science and Business Media Singapore, 2016.

Session 2014-15 (July 2014- June 2015)

- N. Bansal, A. Bansal, V. K. Deolia and P. Pathak, Comparative analysis of LSB, DCT, and DWT for digital watermarking, In the Proceeding of 9th INDIACom, INDIACom 2015, 2nd IEEE International Conference on Computing for Sustainable Global Development, March 11-13, 2015.
- P. Pathak, N. Bansal. and S. Singh, Mulyankan: A prediction for student’s performance using Neural network, In the Proceeding of 9th INDIACom, INDIACom 2015, 2nd IEEE International Conference on Computing for Sustainable Global Development, March 11-13, 2015.

Session 2013-14 (July 2013- June 2014)

- G. Agrawal and N. Godani, Adjoint of a Lorentz transformation, In the proceedings of the International conference on Innovative Trends in Applied Physical, Chemical, Mathematical Sciences and Emerging Energy Technology for Sustainable Development, JNU New Delhi, 19-20 April, 2014.

Session 2012-13 (July 2012- June 2013)

- V. K. Dwivedi, A. S. Chahar and P. Pathak, Modeling of shell and tube heat exchanger for fuzzy proportional derivative (FDP) control, In the proceeding of National Conference on Achieving Excellence for Industrial Competitiveness (AEIC), GLA University Mathura, 19-20 January 2013.
- V. K. Dwivedi, M. Tiwari and P. Pathak, Implementing fuzzy logic for prediction of power generation of small scale vertical axis wing turbine, In the proceeding of National Conference on Achieving Excellence for Industrial Competitiveness (AEIC), GLA University Mathura, 19-20 January 2013.
- V. K. Dwivedi, D. Sharma and P. Pathak, Decision for Gate Limiter of a Hydro Power Plant Based on Fuzzy Logic, In the proceeding of national conference on achieving excellence for industrial competitiveness (AEIC), GLA University Mathura, 19-20 January 2013.
- S. Kumar, N. Bansal and P. Pathak, Comparative study of different edge detectors used in edge detection, In the proceedings of 7th National Conference on Computing for Nation Development, held at Bharati Vidyapeeth's Institute of Computer Application and Management, New Delhi, March, 07-08, 2013.

Session 2011-12 (July 2011- June 2012)

- N. Bansal and P. Pathak, A review of applications of neural network in watermarking, In the proceeding of 7th National Conference on Advancement of Technologies- Information Systems and Computer Networks ,held at GLA University, Mathura, May 9-12, 2012.
- P. Pathak, Character and Numeric Value Recognition System Using Back Propagation Algorithm” In the proceeding of National Conference on Latest Trends and Innovation in Computing , held at AISECT University, Bhopal, November 17-18, 2011.
- R. Rastogi and P. Pathak, Competency mapping for team configuration using fuzzy approach, In the proceeding of National Conference on Governance in the 21th century: Challenges and Prospects, Dr. B. R.Ambedker University, Agra, February 12-14, 2011.
- A. Saraswat, Exact solution for the unsteady rotational flow of Rivlin-Ericksen fluid in an annular pipe, In proceeding of National Conference on Recent Advances in Physics & Technologies, Agra College Agra, 2011.

Workshops / Conference Participation

Session 2016-17 (July 2016- June 2017)

- Kaushik, Jitendra participated in Short Term Course on “Quantitative Decision Modeling” at IITKharagpur, during July. 4-8, 2016.
- Pathak, Pooja participated and Presented a paper entitled “Green Supply Chain Management Using Fuzzy Set Theory Under Uncertainty” in 22nd Annual Int. Conf. on Society of Operations Research at ABVIITM, Gwalior, on Dec. 23 , 2016.
- Singh Alka participated and Presented a paper entitled “Dual Frame Based Estimator: A minimum

Entropy Distance Function Approach” in Int. conf. on “Statistical Inference, Sampling and Optimization

Techniques and Related Areas ” organized by Dept. of Statistics and OR, AMU, Aligarh, Dec. 17-19,2016.

- Singh Alka participated in the 5 day National Workshop on “Innovations and Recent Trends in Bio- mathematics and Statistics Education” by MHRD at Banasthali University, Rajasthan, during Nov. 19-23,2016.
- Singh Alka participated and presented a paper entitled “Method of Calibration Estimation for Dual Frame Surveys” in Int. conf. on “Recent Advances in Mathematics and their Applications” organized by Dept. of Mathematics, Univ. of Rajasthan, during July. 1-12, 2016.
- Sharma, Ashish participated and presented a paper entitled “Inventory Model for Deteriorating Items with Seasonal Demand” in the 6th Int. Sc. Congress, Int. Sc. Community Association at HR Mahavidyalaya, Pune, during Dec. 8-9, 2016.
- Shukla, Kalpana & Kaushik Jitendra participated in the Short term Course on Advance Operations Research, at NITTTR, Chandigarh, during Nov. 7-11, 2016.
- Shukla, Kalpana participated and presented a paper entitled “Properties of Generalised Non-differentiable Multi-objective Variational Central Problem with Generalised Convexity and it’s Applications” in Symposium at ISI, New Delhi during Jan. 9-11, 2017.
- Shukla, Kalpana participated and Presented a paper entitled “Sufficiency and duality for Non-Differentiable Multiobjective Variational Control Problems with generalized Convexity with support functions” in Int. Conf. on “Statistical Inference, Sampling and Optimization Techniques and Related Areas ” organized by Department of Statistics and OR, AMU, Aligarh, during Dec. 17-19, 2016.

Session 2015-16 (July 2015- June 2016)

- Dixit, Archana participated and Presented a Paper entitled “Analysis of plasma layer viscosity in twolayered blood flow in stenotic artery” in the National conference on “Recent Innovations in Applied Science and Humanities” at Rawal Institutions Faridabad, on Oct. 10, 2016.
- Goyal, Manish participated in STTP on “Computational Techniques for Differential Equations (CTDE2016)”, SVNIT, Surat, during May. 2-6, 2016.
- Sharma, Ashish participated and presented a paper entitled “Inventory Model for Deteriorating Items with Seasonal Demand” in the International Conference on Recent Trends in Engineering and Material Sciences (ICEMS-2016), organized by Jaipur National Univ., Jaipur, during March 17-19, 2016.
- Sharma, Ashish participated and Delivered an invited talk on “Sampling Techniques and sample size” in 7 day National Workshop on “Basic Research Methodology and Statistical Analysis”, organized by A.K. P.G. College, Shikohabad, on Feb. 24, 2016.
- Sharma, Ashish participated and delivered an invited talk on “Parametric and Non parametric test” in the

“Workshop on Statistical Skills” at Int. Sc. Congress Asso., MRS College of Prof. Sc., Indore, MP, Aug. 8-9, 2016.

- Sharma, Umesh participated and Presented a Paper entitled “T Gravity in $f(R, T)$ modified theory of general class of Bianchi Model” in 81st Annual Conference of Indian Mathematical Society (IMS), VNIT, Nagpur, during Dec. 27-30, 2015.
- Zia, Rashid participated and Presented a Paper entitled “Anisotropic Dark Energy Models in Brans Dicke Theory of gravitation with Time Dependent Deceleration Parameter” in the National Conference on “Relevance of Ramanujan’s Work and Its Applications in Mathematical Science” organized by Ramanujan Society of Mathematics and Mathematical Science, VBS Purvanchal University, Jaunpur, during Oct. 24- 26, 2016.

Session 2014-15 (July 2014- June 2015)

- Godani, Nisha participated and presented paper entitled ‘A study of Minkowski space with time topology’ in 4th International conference on Innovative Research in Applied Physical, Mathematical/Statistical, Chemical Sciences, Environmental Dynamics, Integration of Life Sciences and Engineering, JNU New Delhi, 27-28 Dec., 2014.
- Godani, Nisha participated and presented paper entitled ‘Group of homeomorphisms of Minkowski space with time topology’ in 3rd International conference on Mathematical Sciences and Applications, IIC New Delhi, 20-21 Dec., 2014.
- Pradhan, Anirudh participated and delivered an invited talk entitled “The Role of Lyra Geometry in Dark Energy Atmosphere” in “International Conference on Geometry and its Applications” (ICGR-2014) organised by the Department of Mathematics, Jadavpur University and Tensor Society of India from 16-18 October, 2014.
- Pradhan, Anirudh participated and delivered an invited talk entitled “The Displacement Vector of Lyra's Manifold: A Candidate of Dark Energy ” in “National Seminar in Physics and Prosperity in Solar Physics Space Science (RDPPSPSS-2014) organised by the department of Physics, M. B. Govt. PG College, Haldwani, Nainital (Uttarakhand), Dec. 27-28, 2014.
- Pradhan, Anirudh participated and delivered an invited talk entitled “Dark Energy Λ -Cosmology and Union 2.1 Compilation” in “Indian Association for General relativity & Gravitation (IAGRG-2015) Meeting, celebrating the centenary year of general relativity held at Raman Research Institute, Bangalore from 18-20 March 2015.
- Shukla, Kalpana participated and presented a paper entitled “Optimality and duality of Variation Programming Problems” in the workshop on “Applied Optimization Models and Computation” held at ISI, Delhi Centre from 28-30 January, 2015.
- Zia, Rashid participated and presented a paper entitled “Transit cosmological model with perfect fluid and heat flow Ballester theory of gravitation” in the Annual conference of the Mathematical Society, BHU, held at department of Mathematics, B.H.U., Varanasi, 30-31 January, 2015.

Session 2013-14 (July 2013- June 2014)

- Godani, Nisha participated and presented paper entitled ‘Adjoint of a Lorentz transformation, in

International conference on Innovative Trends in Applied Physical, Chemical, Mathematical Sciences and Emerging Energy Technology for Sustainable Development, JNU New Delhi, 19-20 April, 2014.

- Goyal, Manish participated in STTP “Ordinary and partial differential equation: Analysis and Applications, Sponsored by TEQIP II, May 27-31, 2014, MANIT, Bhopal.
- Shukla, Kalpana participated and presented a paper "Multi-objective variation problems involving generalized higher order functions" in ICOTA 9 Conference, National Taiwan University of Science & Technology, Dec.12-16, 2013.
- Shukla, Kalpana participated in the CIMPA research school held at University of Delhi, Nov. 25 – Dec. 6, 2014.

International/National Academic Visits

Session 2016-17 (July 2016- June 2017)

INTERNATIONAL ACADEMIC VISIT:

- Pradhan, A. (2016) visited the Department of Mathematical Science, University of Zululand, South Africa as Visiting Research Fellow from March to June, 2016.

Session 2015-16 (July 2015- June 2016)

NATIONAL ACADEMIC VISIT:

- Pradhan, A. (2015) visited IUCAA, Pune from June 10-July 11, 2015 as Visiting Associate.

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NATIONAL ACADEMIC VISITS:

- **Pradhan, A. (2014) visited the Department of Mathematics, Jadavpur University, Kolkata from October 16-22, 2014 for research interaction with Prof. Farook Rahman on recent problems on cosmological constant.**
- **Pradhan, A. (2014) visited IUCAA, Pune from Dec. 13-25, 2014 as Visiting Associate.**

NATIONAL ACADEMIC VISITS:

- Pradhan, A. (2013) visited the Department of Mathematics, Delhi Technological University, Delhi during December 08-14, 2013 for the collaborative work and discussion in G. R. & Cosmology problems.
- Pradhan, A. (2013) visited the Department of Physics, Anand Engineering College during January 20-22, 2014 for the collaborative work and discussion of latest problem on Vacuum Energy in Cosmology.
- Pradhan, A. (2013) participated and delivered a talk "Accelerating anisotropic dark energy models and recent observations" in International Conference on "Differential Geometry and Relativity (ICDGR-2013), Nov. 09-11, 2013 at Department of Mathematics, D. D. U. Gorakhpur University.
- Pradhan, A. (2014) visited Centre for Theoretical Physics (CTP), Jamia Millia Islamia, New Delhi during Feb. 5 - 8, 2014 to discuss the research problems with faculty members of CTP in modified gravity.
- Pradhan, A. (2014) visited IUCAA, Pune from Dec. 23, 2013 – Jan. 19, 2014 as Visiting Associate.
- Pradhan, A. (2014) visited Centre for Theoretical Physics (CTP), Jamia Millia Islamia, New Delhi during the period March 5-8, 2014 to discuss the research problems with faculty members of CTP in modified gravity.
- Pradhan, A. (2014) participated and delivered a series of lectures in the "Winter School on Accelerator, Nuclear & Particle Physics" during March 29 to April 04, 2014 at the Department of Physics, B. H. U., Varanasi.