

## **Department of Mathematics**

### **Research Publications in 2018**

#### **International Journals**

1. Renu Balyan, Niladri Chatterjee, Factor-based evaluation for English to Hindi MT outputs. *Language Resources and Evaluation*, 52(4): 2018, 969-996.
2. Neha Kaushik and Niladri Chatterjee, Automatic Relationship Extraction from Agricultural Text for Ontology Construction. *Information Processing in Agriculture*, 5, 2018, pp 60 – 73.
3. Yadav, N., and Niladri Chatterjee, Fuzzy Rough Set Based Technique for User Specific Information Retrieval: A Case Study on Wikipedia Data. *International Journal of Rough Sets and Data Analysis (IJRSDA)*, 5(4), 2018, pp. 32-47.
4. Anupam and S. Dharmaraja, An analytical model driven by fluid queue for battery life time of an user equipment in LTE-A networks, *Physical Communication*, 30 (2018) pp. 213 – 219.
5. Viswanathan Arunachalam, Garima Mishra and S. Dharmaraja, Optimal Number of Frames Transmitted in a Sensing Based Opportunistic Spectrum Access, *Physical Communication*, 26 (2018) pp. 156 – 161.
6. Sen, Chhanda and Kumar, Harish, Entropy stable schemes for ten-moment Gaussian closure equations. *J. Sci. Comput.* 75 (2018), no. 2, 1128–1155.
7. Meena, Asha Kumari and Kumar, Harish A well-balanced scheme for ten-moment Gaussian closure equations with source term. *Z. Angew. Math. Phys.* 69 (2018), no. 1, Art. 8, 31 pp.
8. Goel, Anubha; Sharma, Amita and Mehra, Aparna Index tracking and enhanced indexing using mixed conditional value-at-risk. *J. Comput. Appl. Math.* 335 (2018), 361–380.
9. Akhilesh Kumar, Anjana Gupta, Aparna Mehra, A Bilevel Programming Model for Operative Decisions on Special Trains: An Indian Railways Perspective *Journal of Rail Transport Planning and Management*, 8, 2018, 184-206.
10. Pooja Bansal, Aparna Mehra, Multi-period additive efficiency measurement in data envelopment analysis with non-positive and undesirable data, *Opsearch*, 2018, 642-661.
11. Mamata Sahu, Anjana Gupta, Aparna Mehra, Acceptably consistent incomplete interval-valued intuitionistic multiplicative preference relations. *Soft Computing*, 22, 2018, 7463-7477.
12. Patel, Kuldip Singh and Mehra, Mani Fourth-order compact scheme for option pricing under the Merton's and Kou's jump-diffusion models. *Int. J. Theor. Appl. Finance* 21 (2018), no. 4, 1850027, 26 pp.
13. Patel, Kuldip Singh and Mehra, Mani A numerical study of Asian option with high-order compact finite difference scheme. *J. Appl. Math. Comput.* 57 (2018), no. 1-2, 467–491.
14. Mani Mehra and Ratikanta Behera, An adaptive wavelet collocation method for solution of the convection-dominated problem on the sphere, *International Journal of computational methods*, Vol. 15 (1) (2018) pp. 1850080--1850098.

15. Panda, B. S.; Pandey, Arti and Paul, S. Algorithmic aspects of b-disjunctive domination in graphs. *J. Comb. Optim.* 36 (2018), no. 2, 572–590.
16. Priyadarshi, Amit and Sahu, Abhilash, Boundary value problem involving the p-Laplacian on the Sierpiński gasket. *Fractals* 26 (2018), no. 1, 1850007, 13 pp.
17. Kumar, Vishvesh; Sarma, R. and Shravan Kumar, N. Orlicz algebras on homogeneous spaces of compact groups and their abstract linear representations. *Mediterr. J. Math.* 15 (2018), no. 4, Art. 186, 13 pp.
18. Kushwaha, S. and Sarma, R, Continued fractions arising from F1,3. *Ramanujan J.* 46(2018), no. 3, 605–631.
19. Sarma, R.; Kumar, N. Shravan and Kumar Vishvesh, Multipliers on vector-valued L1-spaces for hypergroups. *Acta Math. Sin. (Engl. Ser.)* 34 (2018), no. 7, 1059–1073.
20. Jindal, Ankita; Laishram, Shanta and Sarma, Ritumoni, Irreducibility and Galois groups of generalized Laguerre polynomials  $L_{(-1-n-r)n}(x)$ . *J. Number Theory* 183 (2018), 388–406.
21. C. Mehl, V. Mehrmann, and P. Sharma, Structured eigenvalue/eigenvector backward errors of matrix pencils arising in optimal control, *Electronic Journal of Linear Algebra*, 34, pp. 526-560, 2018.
22. Udar, Dinesh; Sharma, R. K.; Srivastava, J. B. J-Boolean group rings and skew group rings. *J. Algebra Appl.* 17 (2018), no. 11, 1850210, 9 pp.
23. Gupta, Anju; Sharma, R. K. and Cohen, Stephen D., Primitive element pairs with one prescribed trace over a finite field. *Finite Fields Appl.* 54 (2018), 1–14.
24. Sharma, Rajendra K.; Awasthi, Ambrish; and Gupta, Anju Existence of pair of primitive elements over finite fields of characteristic 2. *J. Number Theory* 193 (2018), 386–394.
25. Garg, Chirag; and Sharma, R. K. A note on annihilator conditions in prime rings. *Rend. Circ. Mat. Palermo (2)* 67 (2018), no. 2, 197–204.
26. Garg, Chirag; Yadav, Vishal Kr.; and Sharma, R. K. A note on generalized  $(\alpha, \beta)$ -derivation. *Southeast Asian Bull. Math.* 42 (2018), no. 4, 535–543.
27. Sahai, M.; Sharma, R. K.; and Kumari, P. Jordan regular generators of general linear groups. *J. Indian Math. Soc. (N.S.)* 85 (2018), no. 3-4, 422–433.
28. Gupta, Rohit; and Sharma, R. K. Further results on permutation polynomials of the form  $(x^m - x + \delta)s + x$  over  $F_{p^2m}$ . *Finite Fields Appl.* 50 (2018), 196–208.
29. Tiwari, S. K.; Sharma, R. K.; and Dhara, B. Some theorems of commutativity on semiprime rings with mappings. *Southeast Asian Bull. Math.* 42 (2018), no. 2, 279–292.
30. Anju; and Sharma, R. K. On primitive normal elements over finite fields. *Asian-Eur. J. Math.* 11 (2018), no. 2, 1850031, 14 pp.
31. Kumar, Yogesh; Mishra, P. R.; and Sharma, R. K. Nonlinearity of k-cycle permutations on  $Z_n$ . *Asian-Eur. J. Math.* 11 (2018), no. 2, 1850020, 13 pp.
32. Sharma, R. K.; Siwach, Reetu; and Sahai, Meena Group algebras of Lie nilpotency index 12 and 13. *Comm. Algebra* 46 (2018), no. 4, 1428–1446.
33. Vikas Vikram Singh and Abdel Lisser, Variational inequality formulation for the games with random payoffs, *Journal of Global Optimization*, Volv. 72(4), 743-760, 2018.
34. Rao, S. Chandra Sekhara; Kamra, Rabia A hybrid parallel algorithm for large sparse linear systems. *Numer. Linear Algebra Appl.* 25 (2018), no. 6, e2210, 16 pp.

35. Rao, S. Chandra Sekhara; and Manisha, Numerical solution of generalized Black-Scholes model. *Appl. Math. Comput.* 321 (2018), 401–421.
36. Rao, S. Chandra Sekhara and Chawla, Sheetal, Numerical solution of singularly perturbed linear parabolic system with discontinuous source term. *Appl. Numer. Math.* 127 (2018), 249–265.
37. Radha, R.; and Shravan Kumar, N. Weyl transform and Weyl multipliers associated with locally compact abelian groups. *J. Pseudo-Differ. Oper. Appl.* 9 (2018), no. 2, 229–245.
38. Giacomoni, J.; Mukherjee, T.; and Sreenadh, K. Doubly nonlocal system with Hardy-Littlewood-Sobolev critical nonlinearity. *J. Math. Anal. Appl.* 467 (2018), no. 1, 638–672.
39. Prashanth, S.; Tiwari, Sweta; and Sreenadh, K., Very singular problems with critical nonlinearities in two dimensions. *Commun. Contemp. Math.* 20 (2018), no. 2, 1650067, 25 pp.
40. Goel, Divya; Goyal, Sarika; and Sreenadh, K., First curve of Fučik spectrum for the p-fractional Laplacian operator with nonlocal normal boundary conditions. *Electron. J. Differential Equations* 2018, Paper No. 74, 21 pp.
41. Mukherjee, Tuhina; and Sreenadh, Konijeti On doubly nonlocal p-fractional coupled elliptic system. *Topol. Methods Nonlinear Anal.* 51 (2018), no. 2, 609–636.
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43. Suchismita Patra, Srinivas Kumar V.V.K. Finite Element Approximation Using WEB-Splines for the Heat Equation, in Numerical Functional Analysis and Optimization, 39 (2018), no. 13, 1423-1439.
44. Punyani, Pooja; and Tripathi, Amitabha On changes in the Frobenius and Sylvester numbers. *Integers* 18B (2018), Paper No. A8, 12 pp.
45. Federico Elizeche, Edgar; and Tripathi, Amitabha On the nested local postage stamp problem. *Integers* 18 (2018), Paper No. A67, 13 pp.
46. Maran, Kaushik; Reddy, Sai Praneeth; Sharma, Dravyansh; and Tripathi, Amitabha Some results on a class of mixed van der Waerden numbers. *Rocky Mountain J. Math.* 48 (2018), no. 3, 885–904.
47. Peng, Shen; Singh, Vikas Vikram; and Lisser, Abdel General sum games with joint chance constraints. *Oper. Res. Lett.* 46 (2018), no. 5, 482–486.
48. Singh, Vikas Vikram; and Lisser, Abdel A characterization of Nash equilibrium for the games with random payoffs. *J. Optim. Theory Appl.* 178 (2018), no. 3, 998–1013.
49. Chand, A. K. B.; Viswanathan, P.; and Vijender, N. Bicubic partially blended rational fractal surface for a constrained interpolation problem. *Comput. Appl. Math.* 37 (2018), no. 1, 785–804.
50. Verma, S.; and Viswanathan, P. A note on Katugampola fractional calculus and fractal dimensions. *Appl. Math. Comput.* 339 (2018), 220–230.
51. Dinh, Hai Q.; Sharma, Anuradha; Rani, Saroj; Sriboonchitta, Songsak Cyclic and negacyclic codes of length 4ps over  $F_{p^m} + uF_{p^m}$ . *J. Algebra Appl.* 17 (2018), no. 9, 1850173, 22 pp.
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53. Sharma, Anuradha and Kaur, Taranjot, Enumeration of complementary-dual cyclic  $F_q$ -linear  $F_{q^t}$ -codes. *Discrete Math.* 341 (2018), no. 4, 965–980.

54. Sharma, Anuradha and Kaur, Taranjot, Enumeration formulae for self-dual, self-orthogonal and complementary-dual quasi-cyclic codes over finite fields. *Cryptogr. Commun.* 10(2018), no. 3, 401–435.
55. Barman, Rupam and Ray, Chiranjit, Congruences for  $\ell$ -regular over partitions and Andrews' singular over partitions. *Ramanujan J.* 45 (2018), no. 2, 497–515.
56. Khemchandani, Reshma; Saigal, Pooja; and Chandra, Suresh, Angle-based twin support vector machine. *Ann. Oper. Res.* 269 (2018), no. 1-2, 387–417.
57. Dhara, Basudeb; Pradhan, Krishna Gopal; and Tiwari, Shailesh Kumar, Engel type identities with generalized derivations in prime rings. *Asian-Eur. J. Math.* 11 (2018), no. 4, 1850055, 11 pp.
58. Chaudhary, Sudhakar, Crank-Nicolson-Galerkin finite element scheme for nonlocal coupled parabolic problem using the Newton's method. *Math. Methods Appl. Sci.* 41 (2018),no. 2, 724–749.
59. Chaudhary, Sudhakar, Finite element analysis of nonlocal coupled parabolic problem using Newton's method. *Comput. Math. Appl.* 75 (2018), no. 3, 981–1003.
60. Rani, Saroj, On cyclic and negacyclic codes of length  $8\ell m p n$  over finite field. *Asian-Eur. J. Math.* 11 (2018), no. 5, 1850071, 17 pp.
61. D. Cardona and Vishvesh Kumar. Multilinear analysis for discrete and periodic pseudo-differential operators in  $\mathbb{R}^n$  spaces, *Rev. Integr. temas Mat*, 36(2) 151-164 (2018).

### Conference Proceedings

1. Shreemoyee Dutta Choudhury, Soubhik Chakraborty and Niladri Chatterjee. Raga Identification in Rabindra Sangeet by using Motif Discovery. ICCI-2018, Springer , Accepted on 16-10-2018.
2. Chatterjee, N., and Yadav, N. (2018). Hybrid Latent Semantic Analysis and Random Indexing Model for Text Summarization. In *Information and Communication Technology for Competitive Strategies*. Springer, Singapore, pp. 149-156.
3. Niladri Chatterjee, Gautam Jain, Gurkirat Singh Bajwa. Single Document Extractive Text Summarization using Neural Networks and Genetic Algorithm. *Computing Conference 2018*, London, IEEE, pp 203-212, 2018.
4. S. Ramakrishnan, S. Dharmaraja and Subrat Kar: Analysis of Computational Complexity and Power Consumption in Cloud Based Heterogeneous RAN, *National Conference on Communications*, IIT Hyderabad, Feb. 25 - 28, pp. 572 - 577, 2018.
5. B. S. Panda, Anita Das, Characterization and Recognition of Tree 3-Spanner Admissible Directed Path Graphs of Diameter Three. *44th WG* , Germany, 2018, *Lecture Notes in Computer Science*, 11159, Springer 2018, page: 369-381.
6. GillBarequet, Minati De, Michael T.Goodrich, Computing Convex-Straight-Skeleton Voronoi Diagrams for Segments and Convex Polygons. *COCOON 2018 (24th International Conference on Computing and Combinatorics*, Qing Dao, China, July 2-4, 2018):pp. 130-142.
7. Steven Chaplick, Minati De, Alexander Ravsky, Joachim Spoerhase: Approximation Schemes for Geometric Coverage Problems. *ESA 2018 (26th European Symposium of Algorithms*, Helsinki, Finland, August 20-22, 2018), pp. 17:1-17:15
8. Steven Chaplick, Minati De, Alexander Ravsky, Joachim Spoerhase: Brief Announcement: Approximation Schemes for Geometric Coverage Problems. *ICALP2018 (45th International Colloquium on Automata, Languages, and Programming*, ICALP 2018, July 9-13, 2018, Prague, Czech Republic): 107:1-107:4

## **Conference Proceedings edited**

1. B. S. Panda, Partha P. Goswami (eds): Algorithms and Discrete Applied Mathematics - 4th International Conference, CALDAM 2018, Guwahati, India, February 15-17, 2018, Proceedings. Lecture Notes in Computer Science 10743, Springer 2018, ISBN 978-3-319-74179-6.