

## Department of Mathematics

### Research Publications in 2017

#### International Journals

1. Susmita Gupta and Niladri Chatterjee; A Hybrid Approach using Phrases and Rules for Hindi to English Machine Translation. *International Journal of Natural Language Computing (IJNLC)* Vol 6, No. 3, (2017) pp.53-57.
2. S. Dharmaraja; Puneet Pasricha and Paola Tardelli; Markov Chain Model with Catastrophe to Determine Mean Time to Default of Credit Risky Assets, *Journal of Statistical Physics*, 169, (2017) pp. 876 - 888.
3. Singh, Arti; S. Dharmaraja; Mean-variance optimal trading problem subject to stochastic dominance constraints with second order autoregressive price dynamics. *Math. Methods Oper. Res.* 86 (2017), no. 1, 29–69.
4. Arti Singh and S. Dharmaraj;, A portfolio optimisation model for credit risky bonds with Markov model credit rating dynamics, *International Journal of Financial Markets and Derivatives*, 6, (2017) pp. 102 - 119.
5. Puneet Pasricha; S. Dharmaraja and Viswanathan Arunachalam; Markov Regenerative Credit Rating Model, *Journal of Risk Finance*, 18, Issue 3, (2017), pp. 311 -325.
6. R. Sudhesh; A. Azhagappan and S. Dharmaraja; Transient analysis of M/M/1 queue with working vacation, heterogeneous service and customers' impatience, *RAIRO - Operations Research*, 51 (3) 2017, pp. 591 - 606.
7. Sudhesh, R.; Savitha, P.; S.Dharmaraja; Transient analysis of a two-heterogeneous servers queue with system disaster, server repair and customers' impatience. *TOP* 25(2017), no. 1, 179–205.
8. Meena, Asha Kumari; Kumar, Harish; Chandrashekar, Praveen; Positivity-preserving high-order discontinuous Galerkin schemes for ten-moment Gaussian closure equations. *J. Comput. Phys.* 339 (2017), 370–395.
9. Jindal, A.; Jindal, V.; Kundu, S.; McCoy, R. A.; Completeness properties of the open-point and bi-point-open topologies on  $C(X)$ . *Acta Math. Hungar.* 153 (2017), no. 1, 109–119.
10. Jindal, Anubha; McCoy, R. A.; Kundu, S.; Density of the open-point, bi-point-open, and bi-compact-open topologies on  $C(X)$ . *Topology Proc.* 50 (2017), 249–261.
11. Arora, Nitin; Kundu, S.; Commutative feebly clean rings. *J. Algebra Appl.* 16(2017), no. 7, 1750128, 14 pp.
12. Aggarwal, M.; Kundu, S.; More on variants of complete metric spaces. *Acta Math. Hungar.* 151 (2017), no. 2, 391–408.
13. Aggarwal, Manisha; Kundu, S.; Boundedness of the relatives of uniformly continuous functions. *Topology Proc.* 49 (2017), 105–119.
14. Kundu, S.; Aggarwal, Manisha; Hazra, Somnath; Finitely chainable and totally bounded metric spaces: equivalent characterizations. *Topology Appl.* 216 (2017), 59–73.

15. Sharma, Amita; Mehra, Aparna; Financial analysis based sectoral portfolio optimization under second order stochastic dominance. *Ann. Oper. Res.* 256 (2017), no. 1, 171–197.
16. Sharma, Amita; Utz, Sebastian; Mehra, Aparna; Omega-CVaR portfolio optimization and its worst case analysis. *OR Spectrum* 39 (2017), no. 2, 505–539.
17. Sahu, Mamata; Gupta, Anjana; Mehra, Aparna; Hierarchical clustering of interval-valued intuitionistic fuzzy relations and its application to elicit criteria weights in MCDM problems. *Opsearch* 54 (2017), no. 2, 388–416.
18. Sharma, Amita; Mehra, Aparna; Extended omega ratio optimization for risk-averse investors. *Int. Trans. Oper. Res.* 24 (2017), no. 3, 485–506.
19. Sharma, Amita; Agrawal, Shubhada; Mehra, Aparna; Enhanced indexing for risk averse investors using relaxed second order stochastic dominance. *Optim. Eng.* 18 (2017), no. 2, 407–442.
20. Khan, I.; Aggarwal, A.; Mehra, A.; Chandra, S.; Solving matrix games with Atanassov's I-fuzzy goals via indeterminacy resolution approach. *J. Inf. Optim. Sci.* 38 (2017), no. 2, 259–287.
21. Patel, Kuldip Singh; Mehra, Mani; Fourth-Order Compact Finite Difference Scheme for American Option Pricing Under Regime-Switching Jump-Diffusion Models. *Int. J. Appl. Comput. Math.* 3 (2017), suppl. 1, 547–567.
22. Behera, Ratikanta; Mehra, Mani; Approximation of the differential operators on an adaptive spherical geodesic grid using spherical wavelets. *Math. Comput. Simulation* 132 (2017), 120–138.
23. Goyal, Kavita; Mehra, Mani; An adaptive meshfree spectral graph wavelet method for partial differential equations. *Appl. Numer. Math.* 113 (2017), 168–185.
24. Mani Mehra and Kuldip Singh Patel, A suite of compact finite difference schemes, *ACM Transaction on Mathematical software*, Vol. 44 (2017).
25. Akin, Ethan; Auslander, Joseph; Nagar, Anima; Dynamics of induced systems. *Ergodic Theory Dynam. Systems* 37 (2017), no. 7, 2034–2059.
26. Arti Pandey and B.S. Panda; Restrained Domination in Some Subclasses of Chordal Graphs, *Electronic Notes in Discrete Mathematics* 63, (2017) 203–210.
27. Panda, B. S.; Pandey, Arti; Algorithmic aspects of open neighborhood location-domination in graphs. *Discrete Appl. Math.* 216 (2017), part 1, 290–306.
28. Priyadarshi, Amit; Lower bound on the Hausdorff dimension of a set of complex continued fractions. *J. Math. Anal. Appl.* 449 (2017), no. 1, 91–95.
29. Prajapati, S. K.; Sarma, R.; A study of the number of roots of  $x^k=g$  in a finite group via its Frobenius-Schur indicators. *Algebra Colloq.* 24 (2017), no. 1, 93–108.
30. Jindal, Ankita; Laishram, Shanta; Sarma, Ritumoni; Irreducibility and Galois groups of generalized Laguerre polynomials  $L^{(-1-n-r)n}(x)$ . *J. Number Theory* 183 (2018), 388–406
31. Yadav, V. K.; and Sharma, R. K.; Skew n-derivation on prime and semi prime rings. *Ann. Univ. Ferrara Sez. VII Sci. Mat.* 63 (2017), no. 2, 391–402.

32. Udar, Dinesh; Sharma, R. K.; and Srivastava, J. B.; Restricted Boolean group rings. *Arch. Math. (Brno)* 53 (2017), no. 3, 155–159.
33. Tiwari, S. K.; and Sharma, R. K.; Derivations vanishing identities involving generalized derivations and multilinear polynomial in prime rings. *Mediterr. J. Math.* 14 (2017), no. 5, Art. 207, 23 pp.
34. Kanwar, Pramod; Khatkar, Meenu; and Sharma, R. K.; Idempotents and units of matrix rings over polynomial rings. *Int. Electron. J. Algebra* 22 (2017), 147–169.
35. Udar, D.; Sharma, R. K.; and Srivastava, J. B.; Commutative neat group rings. *Comm. Algebra* 45 (2017), no. 11, 4939–4943.
36. Yadav, V. K.; Tiwari, S. K.; and Sharma, R. K.; Generalized derivations on Lie ideals in prime rings. *Asian-Eur. J. Math.* 10 (2017), no. 2, 1750032, 6 pp.
37. Yadav, V. K.; and Sharma, R. K.; On additive mappings in rings with identity element. *Rend. Circ. Mat. Palermo (2)* 66 (2017), no. 3, 355–360.
38. Anju; and Sharma, R. K.; Existence of some special primitive normal elements over finite fields. *Finite Fields Appl.* 46 (2017), 280–303.
39. Garg, Chirag; and Sharma, R. K.; Some algebraic identities in rings and rings with involution. *Palest. J. Math.* 6 (2017), no. 1, 238–246.
40. Siwach, Reetu; Sharma, R. K.; and Sahai, Meena; On the Lie nilpotency indices of modular group algebras. *Beitr. Algebra Geom.* 58 (2017), no. 2, 355–367.
41. Kumar, Yogesh; Mishra, P. R.; Pillai, N. Rajesh; and Sharma, R. K.; Affine equivalence and non-linearity of permutations over Zn. *Appl. Algebra Engrg. Comm. Comput.* 28 (2017), no. 3, 257–279.
42. Tiwari, S. K.; Sharma, R. K.; and Dhara, B.; Derivations vanishing on commutators with generalized derivation of order 2 in prime rings. *Comm. Algebra* 45 (2017), no. 8, 3542–3554.
43. Tiwari, S. K.; Sharma, R. K.; and Dhara, B.; Multiplicative (generalized)-derivation in semiprime rings. *Beitr. Algebra Geom.* 58 (2017), no. 1, 211–225.
44. Sharma, R. K.; Prajapati, B.; Generalized derivations and commutativity of prime Banach algebras. *Beitr. Algebra Geom.* 58 (2017), no. 1, 179–187.
45. Tiwari, S. K.; Prajapati, B.; and Sharma, R. K.; Banach algebra with generalized derivations. *Asian-Eur. J. Math.* 10 (2017), no. 4, 1750069, 11 pp.
46. Rao, S. Chandra Sekhara; and Srivastava, Varsha; Parameter-robust numerical method for time-dependent weakly coupled linear system of singularly perturbed convection-diffusion equations. *Differ. Equ. Dyn. Syst.* 25 (2017), no. 2, 301–325.
47. Kumar, Sunil; and Rao, S. Chandra Sekhara; A robust domain decomposition algorithm for singularly perturbed semilinear systems. *Int. J. Comput. Math.* 94 (2017), no. 6, 1108–1122.
48. Rastogi, Abhishake; and Sampath, Sivananthan; Multi-task learning via linear functional strategy. *J. Complexity* 43 (2017), 51–75.

49. Rastogi, Abhishake; and Sampath, Sivananthan,; Optimal Rates for the Regularized Learning Algorithms under General Source Condition, *Front. Appl. Math. Stat.*, 3:3, 2017
50. Shravan Kumar, N.; Invariant means on a class of von Neumann algebras related to ultraspherical hypergroups II. *Canad. Math. Bull.* 60 (2017), no. 2, 402–410.
51. Giacomoni, Jacques; Mukherjee, Tuhina; and Sreenadh,K; Positive solutions of fractional elliptic equation with critical and singular nonlinearity. *Adv. Nonlinear Anal.* 6 (2017), no. 3,327–354.
52. Mukherjee, Tuhina; and Sreenadh, K;. Positive solutions for nonlinear Choquard equation with singular nonlinearity. *Complex Var. Elliptic Equ.* 62 (2017), no. 8, 1044–1071.
53. Tuhina Mukherjee and K. Sreenadh,; Fractional Choquard Equation with Critical Nonlinearities, *Nonlinear Differential Equations and applications*, 24 (2017), no. 6, 24:63.
54. Musina, Roberta; Nazarov, Alexander I.; and Sreenadh, Konijeti; Variational inequalities for the fractional Laplacian. *Potential Anal.* 46 (2017), no. 3, 485–498.
55. Mishra, Pawan Kumar; and Sreenadh, K.; Fractional p-Kirchhoff system with sign changing nonlinearities. *Rev. R. Acad. Cienc. Exactas Fís. Nat. Ser. A Math. RACSAM* 111 (2017), no. 1, 281–296.
56. Chaudhary, Sudhakar; Srivastava, Vimal; and Srinivas Kumar, V. V. K.; Finite element scheme with Crank-Nicolson method for parabolic nonlocal problems involving the Dirichlet energy. *Int. J. Comput. Methods* 14 (2017), no. 5, 1750053, 24 pp.
57. Chaudhary, Sudhakar; Srivastava, Vimal; Srinivas Kumar, V. V. K.; and Srinivasan, Balaji; Finite element approximation of nonlocal parabolic problem. *Numer. Methods Partial Differential Equations* 33 (2017), no. 3, 786–813.
58. Srivastava, Vimal; Chaudhary, Sudhakar; Kumar, V. V. K. Srinivas; and Srinivasan, Balaji; Fully discrete finite element scheme for nonlocal parabolic problem involving the Dirichlet energy. *J. Appl. Math. Comput.* 53 (2017), no. 1-2, 413–443.
59. Chaudhary, Sudhakar; and Srinivas Kumar, V. V. K.; A priori error estimates for the finite element approximation of a nonlocal Kirchhoff problem using web-splines. *Int. J. Appl. Comput. Math.* 3 (2017), no. 1, 107–118.
60. Tripathi, Amitabha; On a special case of the Frobenius problem. *J. Integer Seq.* 20 (2017), no. 7, Art. 17.7.2, 12 pp.
61. Tripathi, Amitabha; Formulae for the Frobenius number in three variables. *J. Number Theory* 170 (2017), 368–389.
62. Viswanathan, P.; Chand, A. K. B.; and Tyada, K. R.; Lacunary interpolation by fractal splines with variable scaling parameters. *Numer. Math. Theory Methods Appl.* 10 (2017), no. 1, 65–83.
63. Viswanathan,P.; Navascués,M.A.A, fractal operator on some standard spaces of functions. *Proc. Edinb. Math. Soc.*, 60 (2017), no. 3, 771–786.
64. Kaur, Taranjot; and Sharma, Anuradha; Constacyclic additive codes over finite fields. *Discrete Math. Algorithms Appl.* 9 (2017), no. 3, 1750037, 35 pp.

65. Sharma, Anuradha; and Kaur, Taranjot; On cyclic Fq-linear Fqt-codes. *Int. J. Inf. Coding Theory* 4 (2017), no. 1, 19–46.
66. Singh, Arti; Optimal portfolio execution under cointegrated vector autoregressive systems. *Optimization* 66 (2017), no. 11, 1931–1951.
67. Dalal, Aseem; Govil, and Narendra K.; On comparison of annuli containing all the zeros of a polynomial. *Appl. Anal. Discrete Math.* 11 (2017), no. 1, 232–241.
68. Goyal, Sarika; Multiplicity results of fractional p-Laplace equations with sign-changing and singular nonlinearity. *Complex Var. Elliptic Equ.* 62 (2017), no. 2, 158–183.
69. Porwal, Kamana; Discontinuous Galerkin methods for a contact problem with Tresca friction arising in linear elasticity, *Appl. Numer. Math.* 112 (2017), 182–202.
70. Singh, Vikas Vikram; Jouini, Oualid; and Lissner, Abdel; Distributionally robust chance-constrained games: existence and characterization of Nash equilibrium, *Optim. Lett.* 11 (2017), no. 7, 1385–1405.

### Conference Proceedings

1. Pandey, Arti; Panda, B. S.; Dane, Piyush; and Kashyap, Manav; Induced matching in some subclasses of bipartite graphs. *Algorithms and discrete applied mathematics*, 308–319, Lecture Notes in Comput. Sci., 10156, Springer, Cham, 2017.
2. B. S. Panda; and Arti Pandey; On the Complexity of Minimum Cardinality Maximal Uniquely Restricted Matching in Graphs, *Lecture Notes in Computer Science*, vol. 10398, (2017), 218-227.
3. B. S. Panda; and Shaily Verma; Partial Grundy Coloring in Some Subclasses of Bipartite Graphs and Chordal Graphs, *Lecture Notes in Computer Science*, vol. 10398, (2017) 228-237.
4. Nidhika Yadav; and Niladri Chatterjee; A Novel Approach for Feature Selection using Rough Set. *Proceedings Comptelix-2017, IEEE Explore*, pp 196 - 199, 2017.
5. Niladri Chatterjee; Neha Kaushik; Deepali Gupta; and Ramneek Bhatia; Ontology Merging: A Practical Perspective. *Proceedings ICTIS Ahmedabad, March 2017, Springer*.
6. Kartikay Gupta; and Niladri Chatterjee; Financial Time Series Clustering. *Proceedings ICTIS Ahmedabad, March 2017, Springer*.

### Edited Book

S. Arumugam; Jay Bagga; Lowell W. Beineke; B. S. Panda (eds): *Theoretical Computer Science and Discrete Mathematics – First International Conference, ICTCSDM 2016, Krishnankoil, India, December 19-21, 2016*, *Lecture Notes in Computer Science* 10398, Springer 2017, ISBN 978-3-319-64418-9