

BIBLIOGRAPHY

BIBLIOGRAPHY

- [1] Zadeh, L. A. (1965). Fuzzy Sets. *Information and Control*, **8**, 338-353.
- [2] Chang, C. L. (1968). Fuzzy topological spaces. *Journal of Mathematical Analysis and Applications*, **24**(1), 182-190.
- [3] Atanassov, K. T. (1986). Intuitionistic fuzzy sets. *Fuzzy Sets and Systems*, **20**, 87-96.
- [4] Çoker, D. (1997). An introduction to intuitionistic fuzzy topological spaces. *Fuzzy Sets and Systems*, **88**(1), 81-89.
- [5] Rosenfeld, A. (1971). Fuzzy groups. *Journal of Mathematical Analysis and Applications*, **35**(3), 512-517.
- [6] Foster, D. H. (1979). Fuzzy topological groups. *Journal of Mathematical Analysis and Applications*, **67**(2), 549-564.
- [7] Azad, K. K. (1981). On fuzzy semicontinuity, fuzzy almost continuity and fuzzy weakly continuity. *Journal of Mathematical Analysis and Applications*, **82**(1), 14-32.

- [8] Kelly, J. (1963). Bitopological spaces. *Proceedings of the London Mathematical Society*, **3**(1), 71-89.
- [9] Kandil, A., Nouh, A. A., & El-Sheikh, S. A. (1995). On fuzzy bitopological spaces. *Fuzzy Sets and Systems*, **74**(3), 353-363.
- [10] Lee, S. J., & Kim, J. T. (2012). Some properties of intuitionistic fuzzy bitopological spaces. In *The 6th International Conference on Soft Computing and Intelligent Systems, and The 13th International Symposium on Advanced Intelligence Systems*, *IEEE*, 1040-1045.
- [11] Bhattacharya, B. (2017). Fuzzy independent topological spaces generated by fuzzy γ^* -open sets and their applications. *Afrika Matematika*, **28**(5), 909-928.
- [12] Bhattacharya, B., Chakraborty, J., & Paul, A. (2020). γ^* -Hyperconnectedness in fuzzy topological spaces. *The Journal of Analysis*, **28**(1), 9-19.
- [13] Bhattacharya, B., & Paul, A. (2016, June). Generalizations of γ -open set in topological spaces. In *AIP Conference Proceedings*, AIP Publishing LLC, **1751**(1), 020012.
- [14] Bhattacharya, B., & Chakraborty, J. (2015, May). Contra continuity and almost contra continuity in generalized fuzzy topological spaces. In *AIP Conference Proceedings*, AIP Publishing LLC, **1660**(1), 050036.
- [15] Das, B., & Bhattacharya, B. (2019). On (i, j) Generalized fuzzy γ -closed set in fuzzy bitopological spaces. In *Soft Computing for Problem Solving*, Springer, Singapore, 661-673.
- [16] Das, B., Bhattacharya, B., Chakraborty, J., Sree Anusha, G., & Paul, A. (2019). A new type of generalized closed set via γ -open set

in a fuzzy bitopological space. *Proyecciones (Antofagasta)*, **38**(3), 511-536.

- [17] Das, B., Bhattacharya, B., Chakraborty, J., & Tripathy, B. C. (2021). Generalized fuzzy closed sets in a fuzzy bitopological space via γ -open sets. *Afrika Matematika*, **32**(3), 333-345.
- [18] Paul, A., Bhattacharya, B., & Chakraborty, J. (2017). On Lambda Gamma-set in fuzzy bitopological spaces. *Boletim da Sociedade Paranaense de Matemática*, **35**(3), 285-299.
- [19] Paul, A., Bhattacharya, B., & Chakraborty, J. (2017). γ -Hyperconnectedness and fuzzy mappings in fuzzy bitopological spaces. *Journal of Intelligent & Fuzzy Systems*, **32**(3), 1815-1820.
- [20] Garg, H., Perveen PA, F., John, S. J., & Perez-Dominguez, L. (2022). Spherical fuzzy soft topology and its application in group decision-making problems. *Mathematical Problems in Engineering*, 2022.
- [21] Garg, H., & Rani, D. (2022). Novel distance measures for intuitionistic fuzzy sets based on various triangle centers of isosceles triangular fuzzy numbers and their applications. *Expert Systems with Applications*, **191**, 116228.
- [22] Garg, H. (2021). New exponential operation laws and operators for interval-valued q-rung orthopair fuzzy sets in group decision making process. *Neural Computing and Applications*, **33**(20), 13937-13963.
- [23] Tripathy, B. C., & Ray, G. C. (2013). Mixed fuzzy ideal topological spaces. *Applied Mathematics and Computation*, **220**, 602-607.

- [24] Tripathy, B. C., & Debnath, S. (2013). γ -open sets and γ -continuous mappings in fuzzy bitopological spaces. *Journal of Intelligent & Fuzzy Systems*, **24**(3), 631-635.
- [25] Tripathy, B. C., & Debnath, S. (2015). On fuzzy b-locally open sets in bitopological spaces. *Songklanakarin Journal of Science and Technology*, **37**(1), 93-96.
- [26] Smarandache, F., & Neutrosophy, N. P. (1998). Set, and Logic, ProQuest Information & Learning. *Ann Arbor*, Michigan, USA, 105, 118-123.
- [27] Smarandache, F. (2002). Neutrosophy and Neutrosophic Logic, First International Conference on Neutrosophy, Neutrosophic Logic, Set, Probability, and Statistics. *University of New Mexico*, Gallup, NM, 87301.
- [28] Smarandache, F. (2005). Neutrosophic set-a generalization of the intuitionistic fuzzy set. *International Journal of Pure and Applied Mathematics*, **24**(3), 287.
- [29] Smarandache, F. (2013). n-valued refined neutrosophic logic and its applications to physics. *Progress in Physics*, **2013**(4), 143-147.
- [30] Smarandache, F. (2017). Neutrosophic Perspectives: Triplets, Duplets, Multisets, Hybrid Operators, Modal Logic, Hedge Algebras. And Applications. Second extended and improved edition. *Brussels*, Belgium: Pons.
- [31] Smarandache, F. (2016). Neutrosophic Overset, Neutrosophic Underset, and Neutrosophic Offset. Similarly for Neutrosophic Over-/Under-/Off-Logic, Probability, and Statistics. *Brussels*, Belgium: Pons.

- [32] Salama, A. S. (2011). Some topological properties of rough sets with tools for data mining. *International Journal of Computer Science Issues*, **8**(3), 588.
- [33] Broumi, S., Smarandache, F., & Dhar, M. (2014). Rough neutrosophic sets. *Neutrosophic Sets and Systems*, **30**, 60-65.
- [34] Parimala, M., Karthika, M., Smarandache, F., & Broumi, S. (2020). On closed sets and its connectedness in terms of neutrosophic topological spaces. *International Journal of Neutrosophic Science*, **2**(2), 82-88.
- [35] Garg, H., Rajeswari, S., Sugapriya, C., & Nagarajan, D. (2022). A model for container inventory with a trapezoidal bipolar neutrosophic number. *Arabian Journal for Science and Engineering*, 1-21.
- [36] Garg, H. (2020). Multiple attribute decision making based on immediate probabilities aggregation operators for single-valued and interval neutrosophic sets. *Journal of Applied Mathematics and Computing*, **63**(1), 619-653.
- [37] Garg, H. (2020). Novel neutrality aggregation operator-based multiattribute group decision-making method for single-valued neutrosophic numbers. *Soft Computing*, **24**(14), 10327-10349.
- [38] Garg, H. (2020). Algorithms for single-valued neutrosophic decision making based on TOPSIS and clustering methods with new distance measure. *AIMS Mathematics*, **5**(3), 2671-2693.
- [39] Garg, H. (2019). Algorithms for possibility linguistic single-valued neutrosophic decision-making based on COPRAS and aggregation operators with new information measures. *Measurement*, **138**, 278-290.

- [40] Garg, H. (2018). New logarithmic operational laws and their applications to multiattribute decision making for single-valued neutrosophic numbers. *Cognitive Systems Research*, **52**, 931-946.
- [41] Garg, H. (2022). SVNMPR: A new single-valued neutrosophic multiplicative preference relation and their application to decision-making process. *International Journal of Intelligent Systems*, **37**(3), 2089-2130.
- [42] Tripathy, B. C., & Das, S. (2021). Pairwise neutrosophic b-continuous function in neutrosophic bitopological spaces. *Neutrosophic Sets and Systems*, **43**, 82-92.
- [43] Das, R., & Tripathy, B. C. (2020). Neutrosophic multiset topological space. *Neutrosophic Sets and Systems*, **35**, 142-152.
- [44] Das, S., & Tripathy, B. C. (2020). Pairwise neutrosophic-b-open set in neutrosophic bitopological spaces. *Neutrosophic Sets and Systems*, **38**, 135-144.
- [45] Das, S., & Tripathy, B. C. (2021). Neutrosophic simply b-open set in neutrosophic topological spaces. *Iraqi Journal of Science*, 4830-4838.
- [46] Abdel-Basset, M., Manogaran, G., Gamal, A., & Smarandache, F. (2019). A group decision making framework based on neutrosophic TOPSIS approach for smart medical device selection. *Journal of Medical Systems*, **43**(2), 1-13.
- [47] Abdel-Basset, M., & Mohamed, R. (2020). A novel plithogenic TOPSIS-CRITIC model for sustainable supply chain risk management. *Journal of Cleaner Production*, **247**, 119586.

- [48] Abdel-Basset, M., Saleh, M., Gamal, A., & Smarandache, F. (2019). An approach of TOPSIS technique for developing supplier selection with group decision making under type-2 neutrosophic number. *Applied Soft Computing*, **77**, 438-452.
- [49] Abdel-Baset, M., Chang, V., & Gamal, A. (2019). Evaluation of the green supply chain management practices: A novel neutrosophic approach. *Computers in Industry*, **108**, 210-220.
- [50] Abdel-Baset, M., Chang, V., Gamal, A., & Smarandache, F. (2019). An integrated neutrosophic ANP and VIKOR method for achieving sustainable supplier selection: A case study in importing field. *Computers in Industry*, **106**, 94-110.
- [51] Pamučar, D., & Božanić, D. (2019). Selection of a location for the development of multimodal logistics center: Application of single-valued neutrosophic MABAC model. *Operational Research in Engineering Sciences: Theory and Applications*, **2**(2), 55-71.
- [52] Liu, F., Aiwu, G., Lukovac, V., & Vukic, M. (2018). A multi-criteria model for the selection of the transport service provider: A single valued neutrosophic DEMATEL multicriteria model. *Decision Making: Applications in Management and Engineering*, **1**(2), 121-130.
- [53] Guo, Z. L., Liu, Y. L., & Yang, H. L. (2017). A novel rough set model in generalized single valued neutrosophic approximation spaces and its application. *Symmetry*, **9**(7), 119.
- [54] Nie, R. X., Wang, J. Q., & Zhang, H. Y. (2017). Solving solar-wind power station location problem using an extended weighted aggregated sum product assessment (WASPAS) technique with interval neutrosophic sets. *Symmetry*, **9**(7), 106.

- [55] Ye, J. (2016). Correlation coefficients of interval neutrosophic hesitant fuzzy sets and its application in a multiple attribute decision making method. *Informatica*, **27**(1), 179-202.
- [56] Pamučar, D., Badi, I., Sanja, K., & Obradović, R. (2018). A novel approach for the selection of power-generation technology using a linguistic neutrosophic CODAS method: A case study in Libya. *Energies*, **11**(9), 2489.
- [57] Pamučar, D., Sremac, S., Stević, Ž., Ćirović, G., & Tomić, D. (2019). New multi-criteria LNN WASPAS model for evaluating the work of advisors in the transport of hazardous goods. *Neural Computing and Applications*, **31**(9), 5045-5068.
- [58] Karaaslan, F., & Hunu, F. (2020). Type-2 single-valued neutrosophic sets and their applications in multi-criteria group decision making based on TOPSIS method. *Journal of Ambient Intelligence and Humanized Computing*, **11**(10), 4113-4132.
- [59] Maiti, I., Mandal, T., & Pramanik, S. (2020). Neutrosophic goal programming strategy for multi-level multi-objective linear programming problem. *Journal of Ambient Intelligence and Humanized Computing*, **11**(8), 3175-3186.
- [60] Al-Omeri, W. (2016). Neutrosophic crisp sets via neutrosophic crisp topological spaces NCTS. *Neutrosophic Sets and Systems*, **13**, 96-105.
- [61] Al-Omeri, W., & Smarandache, F. (2016). New neutrosophic sets via neutrosophic topological spaces. *Neutrosophic Operational Research*, **1**, 189-209.

- [62] Abdel-Basset, M., Chang, V., Mohamed, M., & Smarandache, F. (2019). A refined approach for forecasting based on neutrosophic time series. *Symmetry*, **11**(4), 457.
- [63] Abdel-Basset, M., El-Hoseny, M., Gamal, A., & Smarandache, F. (2019). A novel model for evaluation Hospital medical care systems based on plithogenic sets. *Artificial Intelligence in Medicine*, **100**, 101710.
- [64] Salama, A. A., & Alblowi, S. A. (2012). Neutrosophic set and neutrosophic topological spaces. *IOSR Journal of Mathematics*, **3**(4), 31-35.
- [65] Devi, R., Dhavaseelan, R., & Jafari, S. (2017). On separation axioms in an ordered neutrosophic bitopological space. *Neutrosophic Sets and Systems*, **18**(1), 4.
- [66] Mwchahary, D. D., & Basumatary, B. (2020). A note on neutrosophic bitopological space. *Neutrosophic Sets and Systems*, **33**, 134-144.
- [67] Sumathi, I. R., & Arockiarani, I. (2015). Fuzzy neutrosophic groups. *Advanced in Fuzzy Mathematics*, **10**(2), 117-122.
- [68] Sumathi, I. R., & Arockiarani, I. (2016). Topological group structure of neutrosophic set. *Journal of Advanced Studies in Topology*, **7**(1), 12-20.
- [69] Imran, Q. H., Al-Obaidi, A. H. M., & Smarandache, F. (2020). On some types of neutrosophic topological groups with respect to neutrosophic alpha open sets. *Neutrosophic Sets and Systems*, **32**, 425-435.

- [70] Broumi, S., Ullah, K., Mahmood, T., Talea, M., Bakali, A., Smarandache, F., ... & Lathamaheswari, M. (2021). Trends on extension and applications of neutrosophic graphs to robots. In *Toward Humanoid Robots: The Role of Fuzzy Sets*, Springer, Cham, 277-308.
- [71] Hussain, S., Hussain, J., Rosyida, I., & Broumi, S. (2022). Quadripartitioned neutrosophic soft graphs. In *Handbook of Research on Advances and Applications of Fuzzy Sets and Logic*, IGI Global, 771-795.
- [72] Aparna, V., Mohanapriya, N., & Broumi, S. (2022). Single valued neutrosophic R-dynamic vertex coloring of graphs. *Neutrosophic Sets and Systems*, **48**, 306-317.
- [73] Mehmood, A, Nadeem, F. , Nordo, G., Zamir, M., Park, C., Kalsoom, H., Jabeen, S., & Khan, M. I. (2020). Generalized neutrosophic separation axioms in neutrosophic soft topological spaces. *Neutrosophic Sets and Systems*, **32**, 38-51.
- [74] Mehmood, A., Nadeem, F., Park, C., Nordo, G., Kalsoom, H., Khan, M. R., & Abbas, N. (2020). Neutrosophic soft α -open set in neutrosophic soft topological spaces. *Journal of Algorithms and Computation*, **52**(1), 37-66.
- [75] Khattak, A. M., Hanif, N., Nadeem, F., Zamir, M., Park, C., Nordo, G., & Jabeen, S. (2019). Soft b-separation axioms in neutrosophic soft topological structures. *Annals of Fuzzy Mathematics and Informatics*, **18**(1), 93-105.
- [76] Edalatpanah, S. A. (2020). Data envelopment analysis based on triangular neutrosophic numbers. *CAAI Transactions on Intelligence Technology*, **5**(2), 94-98.

- [77] Wang, Q., Huang, Y., Kong, S., Ma, X., Liu, Y., Das, S. K., & Edalatpanah, S. A. (2021). A novel method for solving multiobjective linear programming problems with triangular neutrosophic numbers. *Journal of Mathematics*, **2021**.
- [78] Veeramani, C., Edalatpanah, S. A., & Sharanya, S. (2021). Solving the multiobjective fractional transportation problem through the neutrosophic goal programming approach. *Discrete Dynamics in Nature and Society*, **2021**.
- [79] Salama, A. A., Smarandache, F., & Kromov, V. (2014). Neutrosophic closed set and neutrosophic continuous functions. *Neutrosophic Sets and Systems*, **4**, 4-9.
- [80] Smarandache, F. (2018). Extension of soft set to hypersoft set, and then to plithogenic hypersoft set. *Neutrosophic Sets and Systems*, **22**(1), 168-170.
- [81] Smarandache, F. (2018). Plithogenic set, an extension of crisp, fuzzy, intuitionistic fuzzy, and neutrosophic sets- revisited. *Neutrosophic Sets and Systems*, **21**, 153-167.
- [82] Gayen, S., Smarandache, F., Jha, S., Singh, M. K., Broumi, S., & Kumar, R. (2020). Introduction to plithogenic hypersoft subgroup. *Neutrosophic Sets and Systems*, **33**, 208-234.
- [83] Rana, S., Qayyum, M., Saeed, M., & Smarandache, F. (2019). Plithogenic fuzzy whole hypersoft set: construction of operators and their application in frequency matrix multi attribute decision making technique. *Neutrosophic Sets and Systems*, **28**(1), 34-50.
- [84] Ozturk, T. Y., & Ozkan, A. (2019). Neutrosophic bitopological spaces. *Neutrosophic Sets and Systems*, **30**, 88-97.

- [85] Al-Hamido, R. K. (2018). Neutrosophic crisp bi-topological spaces. *Neutrosophic Sets and Systems*, **21**, 66-73.
- [86] Lupiáñez, F. G. (2008). On neutrosophic topology. *Kybernetes*, **37**(6), 797-800.
- [87] Lupiáñez, F. G. (2009). Interval neutrosophic sets and topology. *Kybernetes*, **38**(3-4), 621-624.
- [88] Lupiáñez, F. G. (2009). On various neutrosophic topologies. *Kybernetes*, **38**(6), 1005-1009.
- [89] Lupiáñez, F. G. (2010). On neutrosophic paraconsistent topology. *Kybernetes*, **39**(4), 598-601.
- [90] Sherwood, H. (1983). Products of fuzzy subgroups. *Fuzzy Sets and Systems*, **11**(1-3), 79-89.
- [91] Garg, H. (2016). A new generalized improved score function of interval-valued intuitionistic fuzzy sets and applications in expert systems. *Applied Soft Computing*, **38**, 988-999.
- [92] Kumar, K., & Garg, H. (2018). TOPSIS method based on the connection number of set pair analysis under interval-valued intuitionistic fuzzy set environment. *Computational and Applied Mathematics*, **37**(2), 1319-1329.
- [93] Garg, H., & Rani, D. (2019). Some generalized complex intuitionistic fuzzy aggregation operators and their application to multicriteria decision-making process. *Arabian Journal for Science and Engineering*, **44**(3), 2679-2698.
- [94] Kumar, K., & Garg, H. (2018). Connection number of set pair analysis based TOPSIS method on intuitionistic fuzzy sets and their

- application to decision making. *Applied Intelligence*, **48**(8), 2112-2119.
- [95] Garg, H. (2019). New logarithmic operational laws and their aggregation operators for Pythagorean fuzzy set and their applications. *International Journal of Intelligent Systems*, **34**(1), 82-106.
- [96] Garg, H. (2018). Linguistic pythagorean fuzzy sets and its applications in multiattribute decision-making process. *International Journal of Intelligent Systems*, **33**(6), 1234-1263.
- [97] Garg, H. (2017). Novel intuitionistic fuzzy decision making method based on an improved operation laws and its application. *Engineering Applications of Artificial Intelligence*, **60**, 164-174.
- [98] Garg, H. (2016). A new generalized pythagorean fuzzy information aggregation using Einstein operations and its application to decision making. *International Journal of Intelligent Systems*, **31**(9), 886-920.
- [99] Garg, H. (2019). Algorithms for possibility linguistic single-valued neutrosophic decision-making based on COPRAS and aggregation operators with new information measures. *Measurement*, **138**, 278-290.
- [100] Garg, H. (2016). A novel correlation coefficient between pythagorean fuzzy sets and its applications to decision-making processes. *International Journal of Intelligent Systems*, **31**(12), 1234-1252.
- [101] Garg, H. (2016). A novel accuracy function under interval-valued pythagorean fuzzy environment for solving multicriteria decision making problem. *Journal of Intelligent & Fuzzy Systems*, **31**(1), 529-540.

- [102] Garg, H. (2017). Generalized pythagorean fuzzy geometric aggregation operators using Einstein t-norm and t-conorm for multicriteria decision-making process. *International Journal of Intelligent Systems*, **32**(6), 597-630.
- [103] Peng, X., Dai, J., & Garg, H. (2018). Exponential operation and aggregation operator for q-rung orthopair fuzzy set and their decision-making method with a new score function. *International Journal of Intelligent Systems*, **33**(11), 2255-2282.
- [104] Al-Hamido, R. K., & Gharibah, T. (2018). Neutrosophic crisp tri-topological spaces. *Journal of New Theory*, **23**, 13-21.
- [105] Bera, T., & Mahapatra, N. K. (2017). Introduction to neutrosophic soft topological space. *Opsearch*, **54**(4), 841-867.
- [106] Bera, T., & Mahapatra, N. K. (2016). On neutrosophic soft function. *Annals of Fuzzy Mathematics and Informatics*, **12**(1), 101-119.
- [107] Noiri, T. (1973). On semi-continuous mappings. *Atti della Accademia Nazionale dei Lincei. Classe di Scienze Fisiche, Matematiche e Naturali. Rendiconti*, **54**(2), 210-214.
- [108] Singal, M. (1968). Almost-continuous mappings. *Yokohama Mathematical Journal*, **16**, 63-73.
- [109] Nandhini, M., & Palanisamy, M. (2017). Fuzzy almost contra α -continuous function. *International Journal of Advance Research and Innovative Ideas in Education*, **3**(4), 1964-1771.
- [110] Blizard, W. D. (1989). Multiset theory. *Notre Dame Journal of formal logic*, **30**(1), 36-66.
- [111] Molodtsov, D. (1999). Soft set theory-first results. *Computers & Mathematics with Applications*, **37**(4-5), 19-31.

- [112] Roy, A. R., & Maji, P. K. (2007). A fuzzy soft set theoretic approach to decision making problems. *Journal of computational and Applied Mathematics*, **203**(2), 412-418.
- [113] Shinoj, T. K., & John, S. J. (2012). Intuitionistic fuzzy multisets and its application in medical diagnosis. *World Academy of Science, Engineering and Technology*, **6**(1), 1418-1421.
- [114] Das, R., & Tripathy, B. C. (2020). Neutrosophic multiset topological space. *Neutrosophic Sets and Systems*, **35**, 142-152.
- [115] Broumi, S., Deli, I., & Smarandache, F. (2014). Neutrosophic parametrized soft set theory and its decision making. *International Frontier Science Letters*, **1**(1), 1-11.
- [116] Deli, I., & Broumi, S. (2014). Neutrosophic parameterized soft relations and their applications. *Neutrosophic Sets and Systems*, **4**, 25-34.
- [117] Broumi, S., Deli, I., & Smarandache, F. (2014). Relations on interval valued neutrosophic soft sets. *Journal of New Results in Science*, **3**(5), 01-20.
- [118] Broumi, S., Smarandache, F., & Dhar, M. (2014). Rough neutrosophic sets. *Neutrosophic Sets and Systems*, **3**, 60-65.
- [119] Chakraborty, A., Mondal, S. P., Alam, S., & Dey, A. (2021). Classification of trapezoidal bipolar neutrosophic number, de-bipolarization technique and its execution in cloud service-based MCGDM problem. *Complex & Intelligent Systems*, **7**(1), 145-162.
- [120] Deli, I., & Broumi, S. (2015). Neutrosophic soft relations and some properties. *Annals of Fuzzy Mathematics and Informatics*, **9**(1), 169-182.

- [121] Saha, A., & Broumi, S. (2019). New operators on interval valued neutrosophic sets. *Neutrosophic Sets and Systems*, **28**, 128-137.
- [122] Singh, P. K. (2020). Plithogenic set for multi-variable data analysis. *International Journal of Neutrosophic Science*, **1**(2), 81-89.
- [123] Sankar, C., Sujatha, R., & Nagarajan, D. (2020). TOPSIS by using plithogenic set in COVID-19 decision making. *International Journal of Neutrosophic Science*, 116-125.
- [124] Maji, P. (2009). More on intuitionistic fuzzy soft sets. Rough sets, fuzzy sets, *Data Mining and Granular Computing*, **5908**, 231-240.
- [125] Garg, H. (2016). Generalized intuitionistic fuzzy interactive geometric interaction operators using Einstein t-norm and t-conorm and their application to decision making. *Computers & Industrial Engineering*, **101**, 53-69.
- [126] Garg, H., & Kumar, K. (2020). A novel exponential distance and its based TOPSIS method for interval-valued intuitionistic fuzzy sets using connection number of SPA theory. *Artificial Intelligence Review*, **53**(1), 595-624.
- [127] Maji, P. K. (2012). A neutrosophic soft set approach to a decision making problem. *Annals of Fuzzy Mathematics and Informatics*, **3**(2), 313-319.
- [128] Maji, P. K. (2013). Neutrosophic soft set. *Annals of Fuzzy Mathematics and Informatics*, **5**(1), 157-168.
- [129] Zulqarnain, R. M., Xin, X. L., Saqlain, M., & Smarandache, F. (2020). Generalized aggregate operators on neutrosophic hypersoft set. *Neutrosophic Sets and Systems*, **36**, 271-281.

- [130] Rahman, A. U., Saeed, M., & Smarandache, F. (2020). Convex and concave hypersoft sets with some properties. *Neutrosophic Sets and Systems*, **38**, 497-509.
- [131] Rahman, A. U., Saeed, M., Smarandache, F., & Ahmad, M. R. (2020). Development of hybrids of hypersoft set with complex fuzzy set, complex intuitionistic fuzzy set and complex neutrosophic set. *Neutrosophic Sets and Systems*, **38**, 335-355.
- [132] Saeed, M., Ahsan, M., Siddique, M. K., & Ahmad, M. R. (2020). A study of the fundamentals of hypersoft set theory. *International Journal of Scientific & Engineering Research*, **11**(1), 320-329.
- [133] Salama, A. A., Broumi, S., & Alblowi, S. A. (2014). Introduction to neutrosophic topological spatial region, possible application to GIS topological rules. *International Journal of Information Engineering and Electronic Business*, **6**, 15-21.
- [134] Saqlain, M., Saeed, M., Ahmad, M. R., & Smarandache, F. (2019). Generalization of TOPSIS for neutrosophic hypersoft set using accuracy function and its application. *Neutrosophic Sets and Systems*, **27**, 131-138.
- [135] Saqlain, M., Moin, S., Jafar, M. N., Saeed, M., & Smarandache, F. (2020). Aggregate operators of neutrosophic hypersoft set. *Neutrosophic Sets and Systems*, **32**, 294-306.
- [136] Saqlain, M., Jafar, N., Moin, S., Saeed, M., & Broumi, S. (2020). Single and multi-valued neutrosophic hypersoft set and tangent similarity measure of single valued neutrosophic hypersoft sets. *Neutrosophic Sets and Systems*, **32**(1), 317-329.
- [137] Zulqarnain, R. M., Xin, X. L., Saqlain, M., Saeed, M., Smarandache, F., & Ahamad, M. I. (2021). Some fundamental operations

on interval valued neutrosophic hypersoft set with their properties. *Neutrosophic Sets and Systems*, **40**, 134-148.

- [138] Smarandache, F. (2020). Generalizations and alternatives of classical algebraic structures to neutroalgebraic structures and anti-algebraic structures. *Journal of Fuzzy Extension & Applications*, **1**(2), 85.
- [139] Smarandache, F. (2020). Extension of HyperGraph to n-SuperHyperGraph and to plithogenic n-SuperHyperGraph, and extension of HyperAlgebra to n-ary (Classical-/Neuro-/Anti-) HyperAlgebra. *Neutrosophic Sets and Systems*, **33**, 290-296.
- [140] Smarandache, F. (2020). Structure, NeuroStructure, and Anti-Structure in science. *International Journal of Neutrosophic Science*, **13**(1), 28.
- [141] Rezaei, A., Smarandache, F., & Mirvakili, S. (2021). Applications of (Neuro/Anti) sophications to Semihypergroups. *Journal of Mathematics*, **2021**, 1-7.
- [142] Khan, N. A., Razzaq, O. A., Chakraborty, A., Mondal, S. P., & Alam, S. (2020). Measures of linear and nonlinear interval-valued hexagonal fuzzy number. *International Journal of Fuzzy System Applications*, **9**(4), 21-60.
- [143] Mohammadzadeh, E., & Rezaei, A. On NeutroNilpotentGroups. *Neutrosophic Sets and Systems*, **38**, 33-40.
- [144] Ibrahim, M. A., & Agboola, A. A. A. (2020). Introduction to NeutroHyperGroups. *Neutrosophic Sets and Systems*, **38**, 15-33.
- [145] Smarandache, F., & Hamidi, M. (2020). Neutro-bck-algebra. *International Journal of Neutrosophic Science*, **8**(2), 110-117.

- [146] Al-Tahan, M., Davvaz, B., Smarandache, F., & Anis, O. (2021). On some neutroHyperstructures. *Symmetry*, **13**(4), 535.
- [147] Al-Tahan, M., Smarandache, F., & Davvaz, B. (2021). NeutroOrderedAlgebra: Applications to semigroups. *Neutrosophic Sets and Systems*, **39**, 133-147.
- [148] Agboola, A. A. A. (2020). Introduction to AntiGroups. *International Journal of Neutrosophic Science*, **12**(2), 71-80.
- [149] Agboola, A. A. A. (2020). Introduction to NeutroRings. *International Journal of Neutrosophic Science*, **7**(2), 62-73.
- [150] Agboola, A. A. A. (2020). On finite neutrogroups of type-NG [1, 2, 4]. *International Journal of Neutrosophic Science*, **10**(2), 84-95.
- [151] Agboola, A. A. A. (2020). On finite and infinite NeutroRings of type-NR. *International Journal of Neutrosophic Science*, **11**(2), 87-99.
- [152] Agboola, A., Ibrahim, M., & Adeleke, E. (2020). Elementary examination of neutroalgebras and antialgebras viz-a-viz the classical number systems. *International Journal of Neutrosophic Science*, **4**, 16-19.
- [153] Al-Tahan, M. (2021). NeutroOrderedAlgebra: Theory and Examples. In 3rd International Workshop on Advanced Topics in Dynamical Systems, *University of Kufa*, Iraq.
- [154] Haque, T. S., Chakraborty, A., Mondal, S. P., & Alam, S. (2020). Approach to solve multi-criteria group decision-making problems by exponential operational law in generalised spherical fuzzy environment. *CAAI Transactions on Intelligence Technology*, **5**(2), 106-114.

- [155] Smarandache, F., & Rezaei, A. (2020). On Neutro-BE-algebras and Anti-BE-algebras. *International Journal of Neutrosophic Science*, **4**(1), 8-15.
- [156] Smarandache, F. (2020). NeutroAlgebra is a generalization of partial algebra. *International Journal of Neutrosophic Science*, **2**(1), 08-17.
- [157] Abbas, M., Murtaza, G., & Smarandache, F. (2020). Basic operations on hypersoft sets and hypersoft point. *Neutrosophic Sets and Systems*, **35**, 407-421.
- [158] Wang, L., Garg, H., & Li, N. (2021). Pythagorean fuzzy interactive Hamacher power aggregation operators for assessment of express service quality with entropy weight. *Soft Computing*, **25**(2), 973-993.
- [159] Garg, H., & Kumar, K. (2018). An advanced study on the similarity measures of intuitionistic fuzzy sets based on the set pair analysis theory and their application in decision making. *Soft Computing*, **22**(15), 4959-4970.
- [160] Akram, M., Ilyas, F., & Garg, H. (2020). Multi-criteria group decision making based on ELECTRE I method in Pythagorean fuzzy information. *Soft Computing*, **24**(5), 3425-3453.
- [161] Zulqarnain, R. M., Xin, X. L., & Saeed, M. (2020). Extension of TOPSIS method under intuitionistic fuzzy hypersoft environment based on correlation coefficient and aggregation operators to solve decision making problem. *AIMS Mathematics*, **6**(3), 2732-2755.
- [162] Peng, X., & Garg, H. (2018). Algorithms for interval-valued fuzzy soft sets in emergency decision making based on WDBA and

CODAS with new information measure. *Computers & Industrial Engineering*, **119**, 439-452.

- [163] Garg, H. (2018). New exponential operational laws and their aggregation operators for interval-valued Pythagorean fuzzy multicriteria decision-making. *International Journal of Intelligent Systems*, **33**(3), 653-683.
- [164] Rani, D., & Garg, H. (2018). Complex intuitionistic fuzzy power aggregation operators and their applications in multicriteria decision-making. *Expert Systems*, **35**(6), e12325.
- [165] Garg, H. (2017). Confidence levels based Pythagorean fuzzy aggregation operators and its application to decision-making process. *Computational and Mathematical Organization Theory*, **23**(4), 546-571.
- [166] Garg, H. (2020). Linguistic interval-valued Pythagorean fuzzy sets and their application to multiple attribute group decision-making process. *Cognitive Computation*, **12**(6), 1313-1337.