
Summary and Conclusion

In this thesis, the study of the notion δP_S -open sets is presented. This notion is properly placed between δ -preopen sets and P_S -open sets. The reverse implications of the dependence relationship, which do not hold good, are substantiated by counter examples. The characterizations of δP_S -open sets in semi-regular space, locally indiscrete space, semi- T_1 -space are also obtained.

Properties of various notions related to δP_S -open sets namely δP_S -neighborhood, δP_S -limit point, δP_S -derived set, δP_S -frontier, δP_S -boundary, δP_S -exterior and δP_S -saturated set are studied. δP_S -open sets are characterized using the concept of grill in topological spaces.

As an application of δP_S -open sets, four new spaces are constructed and their interrelations with existing spaces and among themselves are analyzed.

It is shown that the composition of two δP_S -continuous functions is not preserved. The dependency and independency of δP_S -continuous functions with some existing continuous functions are analysed. Characteristics of δP_S -irresoluteness and contra δP_S -irresoluteness functions by inducing surjection, bijection on various types of continuity are presented.

A glimpse of the study on δP_S -open sets is extended to bitopology and is presented with some interesting examples.

The collection of various open sets and closed sets for the topological spaces and bitopological spaces of three elements and four elements are tabulated in Appendix I, Appendix II, Appendix III and Appendix IV are constructed to provide counter example wherever necessary.

The following problems for further study are suggested

- ❖ δP_S -locally open sets and δP_S -locally continuous functions can be developed in topological spaces.
- ❖ (i, j) δP_S -open sets can be extended to the concepts of separation axioms, irresoluteness, homeomorphisms in bitopological spaces.
- ❖ Fuzzy δP_S -open sets can be developed and extended to the concepts of continuity, separation axioms, irresoluteness, and homeomorphisms in fuzzy topological spaces.

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- ❖ δP_S -open sets can be defined for operations and can be extended to its various properties in operation approaches.
 - ❖ The concepts of δP_S -open sets can be defined for biminimal structures, nano topology, intuitionistic fuzzy topology, neutrosophic set theory and their applications may be obtained.