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Algebraic Operations and Cartesian Products Over Interval-Valued Anti-Intuitionistic Fuzzy Soft Ideals in Various Algebras

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Abstract

Molodtsov pointed out that due to the insufficiency of the parameterizations tool, the theories like, the probability theory, the fuzzy set theory, and the theory of interval mathematics is difficult to apply. He solved this problem by presenting the idea of soft set theory. This theory is extensively used in many different fields. Soft set theory was primarily based on the parameterizations of tools. In dealing with uncertain situations, the fuzzy set theory was perhaps the most appropriate theory till then. But the main difficulty with fuzzy sets is to frame a suitable membership function for a specific problem. The reason behind this is the inability of the parameterizations tool of the theory. The soft set theory is considered to be one of the most reliable methods for dealing with uncertainties. This theory is a classification of elements of the universe concerning some given set of parameters. It has been proven that the soft set is more general and has more capabilities in handling uncertain information. A fuzzy set or a rough set is also considered as a special case of soft sets. Research involving soft sets and its application in various fields of science and technology is currently going on at a rapid pace.

Maji, Biwas and Roy introduced the construct of fuzzy soft sets, intuitionistic fuzzy soft set and new operations on intuitionistic fuzzy soft sets. Some results about the properties of those operations are established. Jiang, Tang, Chena and Liu introduced the notion of the interval-valued intuitionistic fuzzy soft set theory is proposed. Our interval-valued intuitionistic fuzzy soft set theory is a combination of an interval-valued intuitionistic fuzzy set theory and a soft set theory. In other words, our interval-valued intuitionistic fuzzy soft set theory is an interval-valued fuzzy extension of the intuitionistic fuzzy soft set theory or an intuitionistic fuzzy extension of the interval-valued fuzzy soft set theory. The complement, ‘‘and’’, ‘‘or’’, union, intersection, necessity and possibility operations are defined on the interval-valued intuitionistic fuzzy soft sets. The basic properties of the interval-valued intuitionistic fuzzy soft sets are also presented and discussed.

Biography

Ragavan C has completed his Ph.D at the age of 37 years from Manonmaniam Sundaranar University, Tamil Nadu, India. At present he is working as Associate professor of Mathematics, Sri Vidya Mandir Arts and Science College, Tamil Nadu, India. I have published 35 articles, that have been cited over 22 times, and H-index is 3. Also i am serving as an editorial board member of reputed Journals.

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