

Fuzzy Dot Ideals And Fuzzy Dot H Ideals Of Bch Algebras

In the beginning of 1983, I came across A. Kaufmann's book "Introduction to the theory of fuzzy sets" (Academic Press, New York, 1975). This was my first acquaintance with the fuzzy set theory. Then I tried to introduce a new component (which determines the degree of non-membership) in the definition of these sets and to study the properties of the new objects so defined. I defined ordinary operations as "n", "U", "+" and "." over the new sets, but I had began to look more seriously at them since April 1983, when I defined operators analogous to the modal operators of "necessity" and "possibility". The late George Gargov (7 April 1947 - 9 November 1996) is the "god father" of the sets I introduced - in fact, he has invented the name "intuitionistic fuzzy", motivated by the fact that the law of the excluded middle does not hold for them. Presently, intuitionistic fuzzy sets are an object of intensive research by scholars and scientists from over ten countries. This book is the first attempt for a more comprehensive and complete report on the intuitionistic fuzzy set theory and its more relevant applications in a variety of diverse fields. In this sense, it has also a referential character.

X Table of Contents Table of Contents XI XII Table of Contents Table of Contents XIII XIV Table of Contents Table of Contents XV XVI Table of Contents K.S. Leung, L.-W. Chan, and H. Meng (Eds.): IDEAL 2000, LNCS 1983, pp. 3-8, 2000. Springer-Verlag Berlin Heidelberg 2000 4 J. Sinkkonen and S. Kaski Clustering by Similarity in an Auxiliary Space 5 6 J. Sinkkonen and S. Kaski Clustering by Similarity in an Auxiliary Space 7 0.6 1.5 0.4 1 0.2 0.5 0 0 10 100 1000 10000 10 100 1000 Mutual information (bits) Mutual information (bits) 8 J. Sinkkonen and S. Kaski 20 10 0 0.1 0.3 0.5 0.7 Mutual information (mbits) Analyses on the Generalised Lotto-Type Competitive Learning Andrew Luk St B&P Neural Investments Pty Limited, Australia Abstract, In generalised lotto-type competitive learning algorithm more than one winner exist. The winners are divided into a number of tiers (or divisions), with each tier being rewarded differently. All the losers are penalised (which can be equally or differently). In order to study the various properties of the generalised lotto-type competitive learning, a set of equations, which governs its operations, is formulated. This is then used to analyse the stability and other dynamic properties of the generalised lotto-type competitive learning.

This book constitutes the refereed proceedings of the Second Conference on Creativity in Intelligent Technologies and Data Science, CIT&DS 2017, held in Volgograd, Russia, in September 2017. The 58 revised full papers and two keynote papers presented were carefully reviewed and selected from 194 submissions. The papers are organized in topical sections on Knowledge Discovery in Patent and Open Sources for Creative Tasks; Open Science Semantic Technologies; Computer Vision and Knowledge-Based Control; Pro-Active Modeling in Intelligent Decision Making Support; Data Science in Energy Management and Urban Computing; Design Creativity in CASE/CAI/CAD/PDM; Intelligent Internet of Services and Internet of Things; Data Science in Social Networks Analysis; Creativity and Game-Based Learning; Intelligent Assistive Technologies: Software Design and Application.

"Neutrosophic Sets and Systems" has been created for publications on advanced studies in neutrosophy, neutrosophic set, neutrosophic logic, neutrosophic probability, neutrosophic statistics that started in 1995 and their applications in any field, such as the neutrosophic structures developed in algebra, geometry, topology, etc.

This book is a printed edition of the Special Issue "New Trends in Fuzzy Set Theory and Related Items" that was published in Axioms

In this paper, we introduce the idea of neutrosophic cubic translation (NCT) and neutrosophic cubic multiplication (NCM) and provide entirely new type of conditions for neutrosophic cubic translation and neutrosophic cubic multiplication on BF-algebra.

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This book presents a unified course in BE-algebras with a comprehensive introduction, general theoretical basis and several examples. It introduces the general theoretical basis of BE-algebras, adopting a credible style to offer students a conceptual understanding of the subject. BE-algebras are important tools for certain investigations in algebraic logic, because they can be considered as fragments of any propositional logic containing a logical connective implication and the constant "1", which is considered as the logical value "true". Primarily aimed at graduate and postgraduate students of mathematics, it also helps researchers and mathematicians to build a strong foundation in applied abstract algebra. Presenting insights into some of the abstract thinking that constitutes modern abstract algebra, it provides a transition from elementary topics to advanced topics in BE-algebras. With abundant examples and exercises arranged after each section, it offers readers a comprehensive, easy-to-follow introduction to this field.

Abstract: Contributors to current issue (listed in papers' order): Dragisa Stanujkic, Florentin Smarandache, Edmundas Kazimieras Zavadskas, Darjan Karabasevic, Huda E. Khalid, Ahmed K. Essa, Kul Hur, Pyung Ki Lim, Jeong Gon Lee, Junhui Kim, Harish Garg, Salah Bouzina, Rajashi Chatterjee, Pinaki Majumdar, Syamal Kumar Samanta, W.B. Vasantha Kandasamy, K. Ilanthenral, Rakib Iqbal, Sohail Zafar,

Muhammad Shoaib Sardar, Pablo José Menéndez Vera, Cristhian Fabián Menéndez Delgado, Susana Paola Carrillo Vera, Milton Villegas Alava, Miriam Peña Gónzales, Nguyen Xuan Thao, Naga Raju I, Rajeswara Reddy P, Dr. Diwakar Reddy V, Dr. Krishnaiah G, Bui Cong Cuong, Wenzhong Jiang, Jun Ye. Papers in current issue (listed in papers' order): Multiple Criteria Evaluation Model Based on the Single Valued Neutrosophic Set; A Neutrosophic Binomial Factorial Theorem with their Refrains; The category of neutrosophic sets, On Single-Valued Neutrosophic Entropy of order α ; Fuzzy Logic vs Neutrosophic Logic: Operations Logic; Interval-valued Possibility Quadripartitioned Single Valued Neutrosophic Soft Sets and some uncertainty based measures on them; Modified Collatz conjecture or $(3a + 1) + (3b + 1)!$ Conjecture for Neutrosophic Numbers; Neutrosophic Cubic Subalgebras and Neutrosophic Cubic Closed Ideals of B-algebras; Static analysis in neutrosophic cognitive maps; (I, T) -Standard neutrosophic rough set and its topologies; Real Life Decision Optimization Model; Rough Standard Neutrosophic Sets: An Application on Standard Neutrosophic Information Systems; Optimal Design of Truss Structures Using a Neutrosophic Number Optimization Model under an Indeterminate Environment. Keywords: neutrosophy, neutrosophic set, neutrosophic logic, neutrosophic probability, neutrosophic statistics, neutrosophic measure, neutrosophic applications.

"Neutrosophic Sets and Systems" has been created for publications on advanced studies in neutrosophy, neutrosophic set, neutrosophic logic, neutrosophic probability, neutrosophic statistics that started in 1995 and their applications in any field, such as the neutrosophic structures developed in algebra, geometry, topology, etc. Some articles in this issue: Neutrosophic Soft Fixed Points, Selection of Alternative under the Framework of Single-Valued Neutrosophic Sets, Application of Single Valued Trapezoidal Neutrosophic Numbers in Transportation Problem.

The book provides readers with an overview of the state of the art in the field of Industry 4.0 and related research advancements. The respective chapters identify and discuss new dimensions of both risk factors and success factors, along with performance metrics that can be employed in future research work. They also discuss a number of real-time issues, problems and applications with corresponding solutions and suggestions. Sharing new theoretical findings, tools and techniques for Industry 4.0, and covering both theoretical and application-oriented approaches, the book offers a valuable asset for newcomers to the field and practicing professionals alike.

Explains the concept of fuzzy logic, tells how it was developed in the United States, but only exploited in Japan so far, and describes products of the future that will feature fuzzy logic

Interval neutrosophic fuzzy decision making is an important part of decision making under uncertainty, which is based on preference order.

"Neutrosophic Sets and Systems" has been created for publications on advanced studies in neutrosophy, neutrosophic set, neutrosophic logic, neutrosophic probability, neutrosophic statistics that started in 1995 and their applications in any field, such as the neutrosophic structures developed in algebra, geometry, topology, etc. Some articles in this issue: Parameter Reduction of Neutrosophic Soft Sets and Their Applications, Geometric Programming (NGP) Problems Subject to (\cdot, \cdot) Operator; the Minimum Solution, Ngpr Homeomorphism in Neutrosophic Topological Spaces, Generalized Neutrosophic Separation Axioms in Neutrosophic Soft Topological Spaces.

Image data has portrayed immense potential as a foundation of information for numerous applications. Recent trends in multimedia computing have witnessed a rapid growth in digital image collections, resulting in a need for increased image data management. Feature Dimension Reduction for Content-Based Image Identification is a pivotal reference source that explores the contemporary trends and techniques of content-based image recognition. Including research covering topics such as feature extraction, fusion techniques, and image segmentation, this book explores different theories to facilitate timely identification of image data and managing, archiving, maintaining, and extracting information. This book is ideally designed for engineers, IT specialists, researchers, academicians, and graduate-level students seeking interdisciplinary research on image processing and analysis.

In this paper, we define intuitionistic neutrosophic set (INSs) and truth-value based INSs. In fact, all INSs are neutrosophic set but all neutrosophic sets are not INSs. We define some new operations on INSs with examples for the implementation of the operations in real life problems. Also, we studied some properties of INSs.

The author studies the Smarandache Fuzzy Algebra, which, like its predecessor Fuzzy Algebra, arose from the need to define structures that were more compatible with the real world where the grey areas mattered, not only black or white. In any human field, a Smarandache n -structure on a set S means a weak structure $\{w(0)\}$ on S such that there exists a chain of proper subsets $P(n-1)$ in $P(n-2)$ in $P(2)$ in $P(1)$ in S whose corresponding structures verify the chain $\{w(n-1)\}$ includes $\{w(n-2)\}$ includes $\{w(2)\}$ includes $\{w(1)\}$ includes $\{w(0)\}$, where 'includes' signifies 'strictly stronger' (i.e., structure satisfying more axioms). This book is referring to a Smarandache 2-algebraic structure (two levels only of structures in algebra) on a set S , i.e. a weak structure $\{w(0)\}$ on S such that there exists a proper subset P of S , which is embedded with a stronger structure $\{w(1)\}$. Properties of Smarandache fuzzy semigroups, groupoids, loops, bigroupoids, biloops, non-associative rings, birings, vector spaces, semirings, semivector spaces, non-associative semirings, bisemirings, near-rings, non-associative near-ring, and binear-rings are presented in the second part of this book together with examples, solved and unsolved problems, and theorems. Also, applications of Smarandache groupoids, near-rings, and semirings in automaton theory, in error correcting codes, and in the construction of S -sub-biautomaton can be found in the last chapter.

The use of fuzzy logic has become prominent in a variety of fields and applications. By implementing these logic sets, problems and uncertainties are more effectively resolved. Emerging Research on Applied Fuzzy Sets and Intuitionistic Fuzzy Matrices is a pivotal reference source for the latest scholarly perspectives on the interdisciplinary use of fuzzy logic theory, focusing on the application of sets and matrices. Highlighting theoretical framework and empirical research findings, this book is ideally designed for academics, practitioners, upper-level students, and professionals interested in an innovative overview of fuzzy logic sets and matrices.

This book constitutes the refereed proceedings of the 8th International Conference on Intelligent Data Engineering and Automated Learning, IDEAL 2007, held in Birmingham, UK, in December 2007. The papers include topical sections on learning and information processing, data mining and information management, bioinformatics and neuroinformatics, agents and distributed systems, financial engineering and modeling, and agent-based approach to service sciences.

The purpose of this book is to present an up to date account of fuzzy ideals of a semiring. The book concentrates on theoretical aspects and consists of eleven chapters including three invited chapters. Among the invited chapters, two are devoted to applications of Semirings to automata theory, and one deals with some generalizations of Semirings. This volume may serve as a useful hand book for graduate students and researchers in the areas of Mathematics and Theoretical Computer Science.

Fuzzy Sets and Their Applications to Cognitive and Decision Processes contains the proceedings of the U.S.-Japan Seminar on Fuzzy Sets and Their Applications, held at the University of California in Berkeley, California, on July 1-4, 1974. The seminar provided a forum for discussing a broad spectrum of topics related to the theory of fuzzy sets,

ranging from its mathematical aspects to applications in human cognition, communication, decision making, and engineering systems analysis. Comprised of 19 chapters, this book begins with an introduction to the calculus of fuzzy restrictions, followed by a discussion on fuzzy programs and their execution. Subsequent chapters focus on fuzzy relations, fuzzy graphs, and their applications to clustering analysis; risk and decision making in a fuzzy environment; fractionally fuzzy grammars and their application to pattern recognition; and applications of fuzzy sets in psychology. An approach to pattern recognition and associative memories using fuzzy logic is also described. This monograph will be of interest to students and practitioners in the fields of computer science, engineering, psychology, and applied mathematics.

The present book contains 20 articles collected from amongst the 53 total submitted manuscripts for the Special Issue “Fuzzy Sets, Fuzzy Logic and Their Applications” of the MDPI journal Mathematics. The articles, which appear in the book in the series in which they were accepted, published in Volumes 7 (2019) and 8 (2020) of the journal, cover a wide range of topics connected to the theory and applications of fuzzy systems and their extensions and generalizations. This range includes, among others, management of the uncertainty in a fuzzy environment; fuzzy assessment methods of human-machine performance; fuzzy graphs; fuzzy topological and convergence spaces; bipolar fuzzy relations; type-2 fuzzy; and intuitionistic, interval-valued, complex, picture, and Pythagorean fuzzy sets, soft sets and algebras, etc. The applications presented are oriented to finance, fuzzy analytic hierarchy, green supply chain industries, smart health practice, and hotel selection. This wide range of topics makes the book interesting for all those working in the wider area of Fuzzy sets and systems and of fuzzy logic and for those who have the proper mathematical background who wish to become familiar with recent advances in fuzzy mathematics, which has entered to almost all sectors of human life and activity.

International Journal of Neutrosophic Science (IJNS) is a peer-review journal publishing high quality experimental and theoretical research in all areas of Neutrosophic and its Applications. IJNS is published quarterly. IJNS is devoted to the publication of peer-reviewed original research papers lying in the domain of neutrosophic sets and systems. Papers submitted for possible publication may concern with foundations, neutrosophic logic and mathematical structures in the neutrosophic setting. Besides providing emphasis on topics like artificial intelligence, pattern recognition, image processing, robotics, decision making, data analysis, data mining, applications of neutrosophic mathematical theories contributing to economics, finance, management, industries, electronics, and communications are promoted.

This book constitutes the refereed proceedings of the Third International Conference on Intelligent Data Engineering and Automated Learning, IDEAL 2002, held in Manchester, UK in August 2002. The 89 revised papers presented were carefully reviewed and selected from more than 150 submissions. The book offers topical sections on data mining, knowledge engineering, text and document processing, internet applications, agent technology, autonomous mining, financial engineering, bioinformatics, learning systems, and pattern recognition.

The two-volume set LNAI 10191 and 10192 constitutes the refereed proceedings of the 9th Asian Conference on Intelligent Information and Database Systems, ACIIDS 2017, held in Kanazawa, Japan, in April 2017. The total of 152 full papers accepted for publication in these proceedings was carefully reviewed and selected from 420 submissions. They were organized in topical sections named: Knowledge Engineering and Semantic Web; Social Networks and Recommender Systems; Text Processing and Information Retrieval; Intelligent Database Systems; Intelligent Information Systems; Decision Support and Control Systems; Machine Learning and Data Mining; Computer Vision Techniques; Advanced Data Mining Techniques and Applications; Intelligent and Context Systems; Multiple Model Approach to Machine Learning; Applications of Data Science; Artificial Intelligence Applications for E-services; Automated Reasoning and Proving Techniques with Applications in Intelligent Systems; Collective Intelligence for Service Innovation, Technology Opportunity, E-Learning and Fuzzy Intelligent Systems; Intelligent Computer Vision Systems and Applications; Intelligent Data Analysis, Applications and Technologies for Internet of Things; Intelligent Algorithms and Brain Functions; Intelligent Systems and Algorithms in Information Sciences; IT in Biomedicine; Intelligent Technologies in the Smart Cities in the 21st Century; Analysis of Image, Video and Motion Data in Life Sciences; Modern Applications of Machine Learning for Actionable Knowledge Extraction; Mathematics of Decision Sciences and Information Science; Scalable Data Analysis in Bioinformatics and Biomedical Informatics; and Technological Perspective of Agile Transformation in IT organizations.

Recent estimates hypothesize that the US will need \$1.6 trillion dollars for the rehabilitation, replacement, and maintenance of existing infrastructure systems within the next 20 years.

Presenting a new vision and way of designing and managing the civil infrastructure of the nation, Intelligent Infrastructure: Neural Networks, Wavelets, and Chaos

The world we live in is pervaded with uncertainty and imprecision. Is it likely to rain this afternoon? Should I take an umbrella with me? Will I be able to find parking near the campus? Should I go by bus? Such simple questions are a common occurrence in our daily lives. Less simple examples: What is the probability that the price of oil will rise sharply in the near future? Should I buy Chevron stock? What are the chances that a bailout of GM, Ford and Chrysler will not succeed? What will be the consequences? Note that the examples in question involve both uncertainty and imprecision. In the real world, this is the norm rather than exception. There is a deep-seated tradition in science of employing probability theory, and only probability theory, to deal with uncertainty and imprecision. The monopoly of probability theory came to an end when fuzzy logic made its debut. However, this is by no means a widely accepted view. The belief persists, especially within the probability community, that probability theory is all that is needed to deal with uncertainty. To quote a prominent Bayesian, Professor Dennis Lindley, “The only satisfactory description of uncertainty is probability.

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