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Absorbent Li – Ideals of Lattice Implication Algebras

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Abstract— ***on this paper we present the concept of Absorbent LI – ideal of pass section notion polynomial math L. We communicate about the relations some of the Absorbent LI – requirements to ILI – beliefs, Associative LI – goals and awesome LI – desires of L. We exhibit the augmentation hypothesis of Absorbent LI – necessities and the crossing factor of Absorbent LI – dreams is additionally an Absorbent LI – best. We exhibit that the complement of Absorbent LI – first-rate is Absorbent channel. At lengthy closing we observe dubious idea to Absorbent LI – requirements and talk approximately the superb houses of hard to recognize Absorbent LI – desires.***

Keywords: LI – ideals, Absorbent LI – ideal, Vague set, Lattice Implication Algebra.

I. INTRODUCTION

Amino acids are little biomolecules with a normal atomic Y. Xu [16] propounded and advanced the opportunity of Lattice suggestion variable primarily based math to analyze the practical framework. After that numerous analysts [1, 3, 12, 13, 15] doing their exploration on pass segment concept polynomial math and based the various LI – goals, inferred the few residences of those LI–convictions. to expand the idea of fluffy set, Gau and Buehrer [2] covered the opportunity of unwell defined set, which allow the partition of evidence enrollment and towards membership. T. Anitha and V.Amarendra Babu [8, 9, 10] exercise dubious plan to three LI – high-quality of grid proposal polynomial math and make bigger the possibility of obscure LI – best of pass segment concept algebras.

constant of this paintings in our past papers we delivered the FLI – dreams, TLI-convictions [7, 11] of Lattice thought algebras and decided more than one places of the requirements. After that we practice the opportunity of dubious to FLI – requirements and TLI - convictions and inferred more than one homes.

in this paper we present the opportunity of Absorbent LI – impeccable of cross section notion variable based totally math L. We talk the individuals from the circle of relatives a number of the Absorbent LI – desires to ILI – convictions, Associative LI – requirements and remarkable LI – convictions of L. We display the augmentation speculation of Absorbent LI – convictions and the convergence of

Absorbent LI – ideals is additionally an Absorbent LI – impeccable. We demonstrate that the complement of Absorbent LI – immaculate is Absorbent channel out. at remaining we practice unwell described idea to Absorbent LI – convictions and disk the various homes of unclear Absorbent LI – standards.

II.PRELIMINARIES

Throughout this paper L represents the lattice implication algebra, otherwise we mention.

Definition2.1[16]:

The complemented lattice L with universal bounds is a lattice implication algebra if it satisfies the following axioms:

(I_1) $p \to (q \to r) = q \to (p \to r)$;
(I_2) $p \to p = I$;
(I_3) $p \to q = q' \to p'$;
(I_4) $p \to q = q \to p = I$ implies $p = q$;
(I_5) $(p \to q) \to q = (q \to p) \to p$;
(L_1) $(p \vee q) \to r = (p \to r) \wedge (q \to r)$;
(L_2) $(p \wedge q) \to r = (p \to r) \vee (q \to r)$.

Theorem 2.2[16]:

Let L be a lattice implication algebra. Then for all p, q, r ∈ L, the following axioms are hold:

(1) $I \to p = p$, $p \to 0 = p$, $0 \to p = I$ and $p \to I = I$.
(2) $p \le q$ if and only if $p \to q = I$.
(3) $p \to q \le (q \to r) \to (p \to r)$.
(4) $((p \to q) \to q) \to q) = p \to q$.

Definition 2.3[1]:

A nonempty subset H of L is called a LI – ideal if $0 \in H$ and $(p \to q)' \in H$ and $q \in H$ implies $p \in H$ for all p, q, r ∈ L.

Definition 2.4[15]:

A nonempty subset H of L is called a ILI – ideal if $0 \in H$ and $(((p \to q)' \to q)' \to r)' \in H$ and $r \in H$ imply $(p \to q)' \in H$.

Definition 2.5[13]:

A nonempty subset H of L is called a associative LI – ideal with respect to p if $0 \in H$ and $((r \to q)' \to p)' \in H$ and $(q \to p)' \in H$ implies $r \in H$ for all p, q, r ∈ L.

Definition 2.6 [7]:

A nonempty subset H of L is called a FLI – ideal if $0 \in H$ and $((p \to r)' \to q)' \in H$ and $q \in H$ implies $(((r \to p)' \to p) \to r)' \in H$ for all p, q, r ∈ L.

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Definition 2.7[6]:

A nonempty subset F of L is called an absorbent filter if I ∈ F and $(p \to q) \to p \in F$ implies $p \in F$ for all $p, q \in L$.

Definition 2.8[2]:

A vague set H in the universal discourse U is characterised by two member ship functions t_H and f_H with the condition $t_H(p) + f_H(p) \leq 1$ where $p \in U$.

The vague set $H = \{<p, [t_H(p) + f_H(p)]>, p \in U\}$

The vague value of p in the set H denoted by $V_H(p)$ is equal to $[t_H, 1 - f_H]$.

Notation [8]:

Let I[0, 1] signify the group of all shut subintervals of [0, 1]. In the event that I1 = [a1, b1], I2 = [a2, b2] are two components of I [0, 1], we call I1 ≥I2 if a1 ≥a 2 and b1 ≥b2. We characterize the term imax to mean the limit of two interim as

$$\text{imax}\,[I_1, I_2] = [\max\{a_1, a_2\}, \max\{b_1, b_2\}].$$

Definition 2.9:

[2] permit A be an difficult to understand association of a universe X with fact enrollment paintings tA and the synthetic participation work fA. For any α, β ϵ [0, 1] with α ≤ β , the (α, β) – lessen or dubious cut of an ambiguous set A may be a fresh subset A (α,β) of the set X given by means of

$$A_{(\alpha,\beta)} = \{p \in X / V_A(p) \geq [\alpha, \beta]\}.$$

Definition 2.10[8]:

A vague set A of L is called a VLI – ideal of L if it $V_A(0) \geq V_A(p)$ and

$V_A(p) \geq \text{imin}\{V_A((p \to q)'), V_A(q)\}$ for all $p, q \in L$.

Definition 2.11[10]:

A vague set A is called a VILI – ideal of L if $V_A(0) \geq V_A(p)$ and

$V_A((p \to q)') \geq \text{imin}\{V_A(((p \to q)' \to q)' \to r)'), V_A(r)\}$ for all $p, q, r \in L$.

Definition 2.12[9]:

Let A be a vague set of a lattice implication algebra L. A is said to be a vague associative LI – ideal of L with respect to x if $V_A(0) \geq V_A(p)$ and

$V_A(r) \geq \text{imin}\{V_A(((r \to q)' \to p)'), V_A((q \to p)')\}$.

Definition 2.13[7]:

A vague set H in L is said to be a vague fantastic LI - ideal of L if $V_H(0) \geq V_H(p)$ and $V_H((((r \to p) \to p) \to r)') \geq \text{imin}\{V_H(((p \to r)' \to q)'), V_H(q)\}$.

III. ABSORBENT Li - IDEALS

In this portion we gift the concept of Absorbent LI – perfect of grid inspiration polynomial math L and communicate different places of Absorbent LI – convictions.

Definition three.1: A nonempty subset An of a move segment concept variable based totally math L is referred to as Absorbent LI – immaculate of L if 0 ∈ An and $(p \to (q \to p)')' \in$ An infers $p \in A$ for all $p, q \in L$.

event three.2: allow L = zero, p, q, r, I be an immovable. At that point truely (L, ∨, ∧, →, zero, I) is cross phase notion variable based math in which the paired task → is portrayed as pursues:

→	0	p	q	r	I
0	I	I	I	I	I
p	q	I	r	I	I
q	p	r	I	I	I
r	r	r	r	I	I
I	0	p	q	r	I

Then the set A = {0, p, r} is an absorbent LI – ideal of L.

Remark 3.3:

Let L = {0, p, q, r, s, I} be a set. Then clearly (L, ∨, ∧, →, 0, I) is lattice implication algebra where the binary operation → is defined as follows:

→	0	p	q	r	s	I
0	I	I	I	I	I	I
p	p	I	q	r	q	I
q	s	p	I	q	p	I
r	p	p	I	I	p	I
s	q	I	I	q	I	I
I	0	p	q	r	s	I

Cleary the set A = {0, p} is a LI – ideal of L. But it is not an absorbent LI – ideal of L because $(s \to (p \to s)')' = 0 \in A$ and $s \notin A$.

From the following theorem it is clear every ILI – ideal of L is an absorbent LI – ideal of L.

Theorem 3.4:

Every ILI – ideal of L is an absorbent LI – ideal of L.

Proof:

Let A be ILI – ideal of L and p, q ∈ L such that $(p \to (q \to p)')' \in A$.

Since $(p \to (q \to p)') \to (p \to (q \to (q \to p)')') = (p \to (q \to p)') \to (p \to ((p' \to q') \to q')')$

$= (p \to (q \to p)') \to (((p' \to q') \to q') \to p')$

$= (p \to (q \to p)') \to (((q' \to p') \to p') \to p')$

$= (p \to (q \to p)') \to (q' \to p')$

$= (p \to (q \to p)') \to (p \to q)$

$\geq (q \to p)' \to q$

$= q' \to (q \to p)$

$= (q \to 0) \to (q \to p)$

$\geq 0 \to p = I$

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So $(p \to (q \to p)') \leq (p \to (q \to (q \to p)')')$, implies
$(p \to (q \to (q \to p)')')' \leq (p \to (q \to p)')'$.
Then $(p \to (q \to (q \to p)')')' \in A$ as A is LI – ideal of L.
Since $(((q \to (q \to p)')' \to (q \to p)')')' \to (p \to (q \to p)')'$
$= (p \to (q \to p)') \to ((q \to (q \to p)')' \to (q \to p)')$
$\geq (q \to (q \to p)')' \to p$
$= p' \to (q \to (q \to p)')$
$= p' \to ((q \to p) \to q')$
$= (q \to p) \to (p' \to q')$
$= I$.
So $(((q \to (q \to p)')' \to (q \to p)')')' \leq (p \to (q \to p)')'$,
then $(((q \to (q \to p)')' \to (q \to p)')')' \in A$ as A is LI – ideal of L.
Clearly $(q \to (q \to p)')' \in A$ as A is ILI – ideal of L.
It yields $p \in A$.
Hence A is an absorbent LI – ideal of L.

Remark 3.5:

The chats of the speculation three.four want not to be real. For the case the set A = zero, p, r is a permeable LI – great of L inside the version 3.2. besides it is not usually an ILI flawless of L because of the reality $((I \to p)' \to p)' = r \in$ An and $(I \to p)' = q \notin A$.

From the ensuing hypothesis it's miles clean if a nonempty subset of L is both LI – first-rate and spongy LI – perfect of L at that factor it's far an ILI – best of L.

speculation three.6: permit A be LI – satisfactory of L. at the off chance that An is a spongy LI – exceptional of L, at that factor it's far ILI – perfect of L.

Proof:

Let A be an absorbent LI – ideal of L and $p, q \in A$ such that $((p \to q)' \to q)' \in A$.
Since $(p \to q)' \to (p \to (p \to q)')' = (p \to (p \to q)') \to (p \to q)$
$= ((p \to q) \to p') \to (q' \to p')$
$\geq q' \to (p \to q)$
$= (p \to q)' \to q$
So $((p \to q)' \to (p \to (p \to q)')')' \leq ((p \to q)' \to q)'$,
Then $((p \to q)' \to (p \to (p \to q)')')' \in A$ as a is an LI – ideal.
Implies $(p \to q)' \in A$ as A is an absorbent LI – ideal.
It yields that A is an ILI – ideal of L.

Theorem 3.7:

Let A be LI – ideal of L. Then A is an absorbent LI – ideal of L if and only if $((p \to (q \to p)')' \to r)' \in A$, $r \in A$ implies $p \in A$ for all $p, q, r \in L$.

Proof:

Suppose that A is an absorbent LI – ideal.
Let $p, q, r \in L$ such that $((p \to (q \to p)')' \to r)' \in A$, $r \in A$.
Since A is LI – ideal of, we get $(p \to (q \to p)')' \in A$.
Since A is an absorbent LI – ideal, we get $p \in A$.
So condition proved.
Conversely suppose that A be LI – ideal of L and $((p \to (q \to p)')' \to r)' \in A$, $r \in A$ implies $p \in A$ for all $p, q, r \in L$.
Let $p, q \in L$ such that $(p \to (q \to p)')' \in A$.
Clearly $(p \to (q \to p)')' \to 0)' = (p \to (q \to p)')' \in A$ and $0 \in A$, by condition $p \in A$.
Hence A is an absorbent LI – ideal of L.

Theorem 3.8:

Every associative LI – ideal of L is an absorbent LI – ideal of L.

Proof:

Let A be associative LI – ideal of L and $p, q \in L$ such that $(p \to (q \to p)')' \in A$.
Clearly $((p \to 0)' \to (q \to p)')' = (p \to (q \to p)')' \in A$.
By theorem 33 [9] , we have $(p \to (0 \to (q \to p)')')' \in A \Longrightarrow (p \to 0)' \in A \Longrightarrow p \in A$.
Hence A is an absorbent LI – ideal of L.

Remark 3.9:

The converse of the theorem 3.8 need not to be true. For example the set A = {0, p, r} is an absorbent LI – ideal of L. But it is not an associative LI – ideal of L because $((q \to p)' \to r)' = 0 \in A$ and $(q \to (p \to r)')' = q \notin A$.

end result three.10:

allow An and B be LI – convictions of L with the end goal that a ⊆ B. on the off risk that An is a retentive LI – flawless of L, at that factor B is in like manner permeable LI – first-rate of L.

proof:

it's far spotless by way of the concept 3.9 [15] and hypotheses three.5 and three.6.
end result three.11:
allow An and B be retentive LI – convictions of L then A ∩ B is also permeable LI – nice of L.

result three.12:

permit A be LI – ideal of L. in the event that An is a spongy LI – exceptional of L, at that factor it is a extraordinary LI – ideal of L.

proof:

it's miles ideal by means of methods for the concept 3.5 [7] and hypotheses 3.5 and 3.6.

hypothesis 3.13:

allow A be a nonempty subset of L. At that factor An is a spongy LI – perfect of L if and exceptional if $A' = p'/p \in A$ is a permeable channel of L.

evidence:

consider that an is a spongy LI – immaculate of L.
Then $0 \in A$, so $I = 0' \in A'$.
Let $p, q \in L$ such that $(p \to q) \to p \in A'$.
Then $((p \to q) \to p)' \in A \Longrightarrow (p' \to (p \to q)')' \in A$
$\Longrightarrow (p' \to (q' \to p')')' \in A$
$\Longrightarrow p' \in A$
$\Longrightarrow p \in A'$.
This proves that A′ is an absorbent filter of L.
Conversely suppose that A′ is an absorbent filter of L.

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Then $I \in A'$, so $0 = I' \in A$.
Let $p, q \in L$ such that $(p \to (q \to p)')' \in A$.
Then $p \to (q \to p)' \in A' \Longrightarrow (q \to p) \to p' \in A'$
$\Longrightarrow (p' \to q') \to p' \in A'$
$\Longrightarrow p' \in A'$
$\Longrightarrow p \in A$.
Hence A is an absorbent LI – ideal of L.

IV. VAGUE ABSORBENT LI – IDEALS AND RESULTS

in this component we blessing the idea of undefined Absorbent LI – high quality of framework motivation polynomial math L and bring approximately brilliant houses of ill described Absorbent LI – goals.

Definition 4.1: An difficult to understand set An on L is known as as dubious retentive LI – perfect of L if VA(0) ≥VA(p) and VA(p) ≥ VA ((p → (q → p)′)′) for all p, q ∈ L.

model 4.2: let L be grid inspiration variable based totally math inside the model 3.2. characterize the ambiguous set

$H = V_H = \{< p,[t_A(p), f_A(p)] > / p \in L\}$ on L as follows:

$t_H(a) = 0.732$ if $a = 0, p, r$ $f_H(a) = 0.19$ if $a = 0, p, r$

$= 0.431$ if $a = q, I$ $= 0.25$ if $a = q, I$

Clearly the vague set A is vague absorbent LI – ideal of L.

Remark 4.3:

Let L be lattice implication algebra in the remark 3.3. Define the vague set

$G = V_G= \{< p,[t_A(p), f_A(p)] > / p \in L\}$ on L as follows:

$t_G(a) = 0.63$ if $a = 0, p$ $f_G(a) = 0.319$ if $a = 0, p$

$= 0.51$ if $a = q, r, s, I$ $= 0.392$ if $a = q, r, s, I$

in reality the indistinct set A is VLI – best of L. however it isn't always a vague absorbent LI – perfect of L due to the fact $VG (s) = [0.51, 0.392] \ngeq [0.63, 0.319] = VG (s \to (p \to s)')'$.

From the subsequent theorem it's far clean every VILI – ideal of L is a indistinct absorbent LI – best of L.

Theorem four.4: every VILI of L is a vague absorbent LI – best of L.

proof: allow A be VILI of L and p, q ∈ L.Clearly $(p \to (q \to (q \to p)')')' \le (p \to (q \to p)')'$ and

$(((q \to (q \to p)')' \to (q \to p)')')' \le (p \to (q \to p)')'$.

Since VILI- ideal is order reversing, we have

$V_A ((p \to (q \to p)')') \le V_A ((p \to (q \to (q \to p)')')')$ and

$V_A ((p \to (q \to p)')') \le V_A ((((q \to (q \to p)')' \to (q \to p)')')')$.

$\le V_A ((p \to (q \to p)')')$.

Since A is VLI – ideal, it yields to

$V_A (p) \ge \text{imin} \{V_A ((p \to (q \to (q \to p)')')'), V_A ((p \to (q \to p)')')\}$

$\ge V_A ((p \to (q \to p)')')$

Hence A is vague absorbent LI – ideal of L.

statement four.five: The chats of the speculation 4.4 want not to be authentic. for example the unclear set H is an sick described permeable LI – best of L in the example 4.2. be that as it can, it isn't usually a VILI incredible of L in light of the reality that $VH ((I \to p)') = [0.431, 0.25] \ngeq [0.732, 0.19] = VH (((I \to p)'\to p)')$.

From the subsequent theorem it's miles clean if a indistinct set on L is both VLI – ideal and vague absorbent LI – perfect of L then it is a VILI – best of L.

Theorem 4.6:

Let A be VLI – ideal of L. If A is a vague absorbent LI – ideal of L then it is VILI – ideal of L.

Proof:

Let A is a vague absorbent LI – ideal of L.

Clearly $((p \to q)' \to (p \to (p \to q)')')' \le ((p \to q)' \to q)'$ for all $p, q \in L$.

Since VLI- ideal is order reversing, we have

$V_A (((p \to q)' \to (p \to (p \to q)')')') \ge V_A (((p \to q)' \to q)')$.

Since A is vague absorbent LI – ideal of L, we have

$V_A ((p \to q)') \ge V_A (((p \to q)' \to (p \to (p \to q)')')')$

$\ge V_A (((p \to q)' \to q)')$.

By theorem 25[9], A is VILI – ideal of L.

Theorem 4.7:

Let A be VLI – ideal of L. Then A is vague absorbent LI – ideal of L if and only if $V_A (p) \ge \text{imin}\{V_A (((p \to (q \to p)')' \to r)') , V_A(r)\}$ for all $p, q, r \in L$.

Proof:

Suppose that A is a vague absorbent LI – ideal of L.

So $V_A (p) \ge V_A ((p \to (q \to p)')')$ for all $p, q \in L$.

Since A is VLI – ideal, we have

$V_A ((p \to (q \to p)')') \ge \text{imin}\{V_A (((p \to (q \to p)')' \to r)') , V_A(r) \in A\}$.

It yields to $V_A (p) \ge \text{imin}\{V_A (((p \to (q \to p)')' \to r)') , V_A(r) \in A\}$.

Conversely suppose that $V_A (p) \ge \text{imin}\{V_A (((p \to (q \to p)')' \to r)') , V_A(r)\}$ for all $p, q, r \in L$.

Taking $r = 0$ in the above inequality, we have

$V_A (p) \ge \text{imin}\{V_A (((p \to (q \to p)')' \to 0)') , V_A(0)\}$

$= \text{imin}\{V_A ((p \to (q \to p)')') , V_A(0)\}$

$= V_A ((p \to (q \to p)')')$.

Hence A is vague absorbent LI – ideal of L.

Theorem 4.8:

Every vague associative LI – ideal of L is vague absorbent LI – ideal of L.

Proof:

Let A be vague associative LI – ideal of L and $p, q \in L$.

Then clearly $V_A ((p \to (q \to p)')') = V_A(((p \to 0)' \to (q \to p)')')$.

Since A is vague associative LI – ideal, we have

$V_A(((p \to 0)' \to (q \to p)')') \le V_A((p \to (0 \to (q \to p)')')')$

$= V_A ((p \to I')')$

$= V_A ((p \to 0)')$

$= V_A (p)$.

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So A is vague absorbent LI – ideal of L.

discourse four.nine: the option of the speculation four.eight need never again to be substantial. for example the questionable set H in the model 4.2, is a questionable porous LI – first rate of L. yet, it's far some angle anyway a vague well-known LI – nature of L in moderate of the way that VH $((q \to (p \to r)')') = [0.431, 0.25] \ngeq [0.732, 0.19] = VH (((q \to p)' \to r)')$.

Hypothesis 4.10: let A be unclear set on L. On the off chance that A will be an ill defined retentive LI – perfect of L, at that point the set

$\hat{A}_a = \{p / V_A(p) \geq V_A(a)\}$ where a ∊ L, is an absorbent LI – ideal of L.

Proof: Let A is a vague absorbent LI – ideal of L and a ∊ L.

Let p, q ∊ L such that $(p \to (q \to p)')' \in \hat{A}_a$.

So $V_A((p \to (q \to p)')') \geq V_A(a)$.

Since A is vague absorbent LI – ideal, we have $V_A(p) \geq V_A((p \to (q \to p)')')$.

It yields $p \in \hat{A}_a$.

Hence $\hat{A}_a$ is an absorbent LI – ideal of L.

Theorem 4.11:

Let H be a vague set on L. Then H is a vague absorbent LI – ideal of L if and only if $H_{(\rho,\sigma)}$ is an absorbent LI – ideal when $H_{(\rho,\sigma)} \neq \emptyset$, $\rho, \sigma \in [0, 1]$.

Proof:

Suppose that H is a vague absorbent LI – ideal of L and $\rho, \sigma \in [0, 1]$.

If $H_{(\rho,\sigma)} \neq \emptyset$ then there exist p ϵ L such that $V_H(p) \geq [\rho, \sigma]$.

Clearly $V_H(0) \geq V_H(p) \geq [\rho, \sigma]$. So $0 \in H_{(\rho,\sigma)}$.

Let p, q, r ϵ L such that $((p \to (q \to p)')' \in H_{(\rho,\sigma)}$.

Since H is a vague absorbent LI – ideal, we have $V_H(p) \geq V_A((p \to (q \to p)')') \geq [\rho, \sigma]$.

So $p \in H_{(\rho,\sigma)}$ and it yields $H_{(\rho,\sigma)}$ is an absorbent LI – ideal of L.

Conversely, Suppose that $H_{(\rho,\sigma)} \neq \emptyset$ is an absorbent LI – ideal where $\rho, \sigma \in [0, 1]$.

For all p ϵ L, $H_{H(p)} \neq \emptyset$ since $p \in H_{H(p)}$, and so $H_{H(p)}$ is an FLI ideal o f L.

So $0 \in H_{H(p)}$, then we have $V_H(0) \geq V_H(p)$.

Let p, q, r ϵ L, let us consider $[\rho, \sigma] = V_A((p \to (q \to p)')')$.

Then $(p \to (q \to p)')' \in H_{(\rho,\sigma)}$. So $H_{(\rho,\sigma)}$ is non empty and $p \in H_{(\rho,\sigma)}$.

$\forall x, y, z \in L$, $V_H(p) \geq [\alpha, \beta] = V_A((p \to (q \to p)')')$

Thus H is a vague absorbent LI – ideal of L.

Theorem 4.12:

Let J and K be vague absorbent LI – ideal of L such that J ⊆ K. If J is a vague absorbent LI – ideal of L, then so is K.

Proof:

Let J and K are vague absorbent LI – ideal of L such that J ⊆ K.

Since J ⊆ K, that is $V_J(p) \leq V_K(p)$ for all p ϵ L .

Then clearly $J_{(\rho,\sigma)} \subseteq K_{(\rho,\sigma)}$ for every $\rho, \sigma \in [0, 1]$.

Since J is a vague absorbent LI – ideal then $J_{(\rho,\sigma)} \neq \emptyset$ is absorbent LI – ideal.

It gives $K_{(\rho,\sigma)} \neq \emptyset$ is a vague absorbent LI – ideal. It yields K is a vague absorbent LI – ideal of L.

Theorem 4.13:

Let A be absorbent LI – ideal of L. The vague set H defined by

$$V_H(p) = [\rho, \rho] \text{ if } p \in A$$
$$= [0, 0] \text{ if } p \notin A$$

is a vague absorbent LI – ideal of L, where $\rho \in [0, 1]$.

Proof:

Let H be a vague set of L, defined by

$V_H(p) = [\rho, \rho]$ if p ϵ A

$= [0, 0]$ if $p \notin A$, where $\rho \in [0, 1]$.

We have 0 ϵ A and so $V_H(0) = [\rho, \rho] \geq V_H(p)$ ∀ p ϵ L.

If $(p \to (q \to p)')' \in A$, where p, q ϵ L, then

$V_A(p) = [\rho, \rho] \geq V_H((p \to (q \to p)')')$.

If $(p \to (q \to p)')' \notin A$, where p, q ϵ L, then $p \notin A$ and so $V_A(p) = [0, 0] = V_H((p \to (q \to p)')'))$.

Hence H is a vague absorbent LI – ideal of L.

Theorem 4.14:

Let H be a vague absorbent LI – ideal of L. Then $A_H = \{p \in L / V_H(p) = V_H(0)\}$ is an absorbent LI – ideal of L.

Proof:

Since $A_H = \{p \in L / V_H(x) = V_H(0)\}$, obviously $0 \in A_H$.

Let p, q ϵ L and $(p \to (q \to p)')' \in A_H$, then $V_H((p \to (q \to p)')') = V_H(0)$.

So $V_A(p) \geq V_H((p \to (q \to p)')') = V_H(0)$ as H is a vague absorbent LI – ideal of L.

And $V_H(0) \geq V_H(p)$, it yields $V_H(p) = V_H(0)$ .Thus $p \in A_H$.

Hence A_H is an absorbent LI – ideal of L.

V. CONCLUSION

Thinking about Y. Xu blanketed the conviction of Lattice inspiration variable based math, a few scientists building up the rule of thumb of various channels and LI – convictions. from the begin Y. B. Jun delivered the possibility of LI – gives of Lattice notion variable primarily based math. After that various analysts proposed the unique LI – convictions like as LI – desires, ILI – convictions, high LI – requirements and so forth relentless of this work we proposed the thoughts of FLI-standards and TLI – convictions in our beyond papers. currently added the conviction of Absorbent LI – convictions and tested the diverse homes. After that we watch the sick described plan to Absorbent LI – requirements. it's far our legitimate with that our work encourages in helping and increasing one-of-a-kind investigates in this field

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