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Abstract

Quantum Mechanics and Computation has a major problem called the measurement problem [7] [19]. This has given physicists a very hard time over the years when I first looked into the problem my approach was simple find a new number system that can go with the uncertainty of a Quantum particle the paper deals with the mathematics of uncertainty which has solved 2 millenium prize problems [4], [5] and quantum measurement problem very efficiently. We divide chaos into two parts low chaos and high chaos then we find the desired value [19] inside the intersection of both. This helps us find something in a $\aleph 3 >>> \infty$ this takes the problems around us to the next level if we are able to control a chaos then we can achieve pretty much anything. This paper is inspired by [22]

Keywords: Mathematics of Uncertainty, Quantum Computing, Chaotic Numbers, Quantum Information

Quantum Computing Using Chaotic Numbers

May 10, 2022

1 Introduction

Mathematics of uncertainty is a new math [22] created specifically for Quantum world and the world we want to understand which is weird and very much chaotic. I have tested this mathematics on 2 Millennium prize problems namely. 1. Riemann Hypothesis [4] and gave different approach to solve 2. Navier Stokes Equation [5]. And of course Quantum Mechanics and Quantum Computing problems [19]. This is an unique approach to tackle the uncertainty of a particle or a Qubit.

This new math has new rules new numbers, new vector fields and a new way to solve and understand chaos/. As we know there aren't many ways to tackle chaos and uncertainty and its considered as impossible to get hold of something which is uncertain in nature but this new mathematics might help us uncover many things we didn't understood. I got into Quantum Mechanics couple of years back and I noticed we aren't actually really understanding what particle is telling us this whole time. It is uncertain and we need a newer method after I turned my attention towards Quantum Computing and there I noticed the same thing we are just calculating in terms of Probability when we can actually study uncertainty I spent a good deal of time in my thought experiments and I think I have finally figured out a way to not calculate qubits/particles in terms of probability but treating them as they are uncertain.

I know even I couldn't believe it first but when I actually put my mathematics to test I couldn't believe it actually worked and now I thought I should publish my findings because I believed we were using a wrong approach to get the Quantum Computing to work and I think I have found the right way.

1.1 Abbreviations and Acronyms

QC: Quantum Computers. Cplane: Chaotic Plane. Un: Uncertain Mathematics [22] k: k from devanagari letters and across paper devanagari numbers mean low chaos. seen: seen from arabic letters and across paper arabic numbers mean high chaos. k_l: k and suffix L which is low chaos. $seen_h$: seen and suffix h which is high chaos.

2 Literature Survey

In Quantum Mechanics there is a problem called the quantum non-locality or the measurement problem [7] and you must be knowing how a quantum particle works if we observe a particle it collapses into a different state [7] the researchers around the globe are trying to get the solution for this insanely probabilistic problem but in this paper we have gone through a list of papers and have found out how the recent researchers try to tackle this very problem. Almost all of the paper's try the probability theory to get the probabilistic solution even after all these years of Quantum Mechanics it seems probability is the only solution but this will change I have come up with a new number system a approach that is completely new totally new even the numbers are different and this helped me solve problems that seems impossible to the world until now for eg. Riemann Hypothesis [4], Navier Stokes Equations [5]. This number system and approach allowed me to understand how chaos works how the unseen which is the basis of what Quantum Technology and particles work so I used this to create a Quantum Computer of mine with my mathematics which goes hand in hand with our today's modern problems. The literature survey done for this is very quality and easy as it was only a matter to find if any other method has been introduced in recent papers other than the probability and I found none so I think my method stands as the unique approach ever since the birth of Bohr's Probability [7] approach this paper introduce you with Mathematics of Uncertainty [22].

3 Uncertainty And Chaos

3.1 About Uncertain Space

- Uncertain space is an infinite space inside the Hilbert Space as $\mathcal{H}$ is infinite and it is denoted as Un
- Un has a number system different from our regular system called Chaotic Numbers denoted as ɲ
- ɲ= $\{k, seen, p, h \dots\}$ these are chaotic numbers one devanagri and one arabic to denote chaotic numbers this is a set of numbers each. Chaotic numbers have 2 sides low chaos and high chaos devanagri and arabic respectively.
- Each $k_l(lowchaos)$ and $seen_h(highchaos)$ has its own set $[k_1, k_2, k_3, k_4, \dots]$ and $[seen_1, seen_2, seen_3, seen_4, \dots]$
- k_1(first low chaos) $= \{0.00256, -0.035, 0.0089, -0.000659.-0.0004698, \dots\}$ $\dots$ k_2(second low chaos) $\dots$ $k_l(lowchaos)$
- $seen_1(firsthighchaos) = \{2.718, 205698, -26, 0.00089, 25+8i, -6-4i, 58, \dots\}$ $\dots$ $seen_2(secondhighchaos)$ $\dots$ $seen_h(highchaos)$

- A chaotic plane has 2 sides k_l and $seen_h$ left and right respectively.

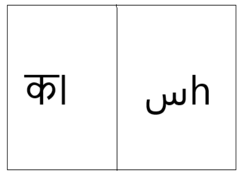

Fig (a). low and high chaos

- Rules for Chaotic Plane:

  1. There are two sides of a chaotic plane low chaos and high chaos k_l and $seen_h$ respectively.
  2. Points on Cplane gets plotted with their respective chaos for eg. low chaotic system will be plotted on k_l and high chaos will be plotted on $seen_h$. refer
  3. All the measurement point will start from initial point 0. these points are movable inside both high and low chaotic sides of the plane. for which we have Mov function.
  4. Any set operations can be performed in the Cplane as we know each k_l and $seen_h$ has numbers inside of them labelled as k_1, k_2 k_3, ... and $seen_1$, $seen_2$, $seen_3$, ...
  5. A line, A circle, A triangle are different in this plane we will take a look at them on Theorem 1.1.

4 Postulates of Uncertain Mathematics

1. There are two types of chaos low and high chaos k_l and $seen_h$ respectively. In which we plot our points and use it as our coordinate system. On calculating in Cplane initial point starts with 0.

2. $seen_h$ has a very high chaos and $seen_1(firsthighchaos) = \{2.718, 205698, -26, 0.00089, 25+8i, -6-4i, 5852133997, \dots\}$, $seen_2$, $seen_3$, $\dots \in seen_h = \{\aleph 3\}$ (George Cantor discovered $\aleph 0$ which is bigger than infinity I have discovered $\{\aleph 3\}$ which is even bigger than $\aleph 0$) and the chaos increases astoundingly by: $seen_1 \leq seen_2 \leq seen_3 \leq \dots \leq seen_h$ and the same goes for low chaotic numbers by: k_l has a low chaos and k_1, k_2, k_3, $\dots \in k_l$ and the chaos increases astoundingly by: $k_1 \leq k_2 \leq k_3 \leq \dots \leq k_l$

3. End points inside the chaotic plane (Cplane) stays fixed but the midpoints don't.

4. Low chaotic points converge to ∞ and high chaotic points to $\{\aleph 3\}$

5. By default Cplane is a Zero set $\{0\}$ and any set operations can be performed on it.

6. You can create a collection of Cplanes k_l and $seen_h$, p_l and sod_h , t_l and $kalf_h$ as per need. eg: ${k^4}_l$ and ${seen^4}_h$ which will yield 3.1 four times simultaneously.

5 Axioms of Uncertain Mathematics

5.1 Chaos Increases in the ascending order

Chaos we defined call low and high chaos respectively have their own increasing numbers every k in low chaos and every *seen* in high chaos have their own subscript l and h respectively which increases as the chaos increase.

eg: Low Chaos increasing in ascending order = $k_1 < k_2 < k_3 < k_4 \cdots < k_l$ High Chaos increasing in ascending order = $seen_1 < seen_2 < seen_3 < seen_4 < \cdots < seen_h$

5.2 Intersection of Earth has k_seen and $seen_k$

As we will know more about intersection of earth and it's importance as we go to our theorems and problems just to give you an idea intersection of earth meaning, imagine the whole universe we know in terms of chaos and uncertainty universe is much much bigger than if we compare it to only earth so what I am saying is we have a Cplane that is our universe which has low and high chaos and we have intersection of the both low and high chaos which we call intersection of Earth region. Now what this Axiom states is that to find the exact value inside our region of intersection of earth since it's the intersection between both low and high chaos we have mixed state of the two k_{seen} and $seen_k$. k_{seen} has low-high chaos meaning the value of k_{seen} is actually computeable as it's in both low+high chaos which means it's more inclined towards the low chaos rather than our bizarre high chaos. Now if we take a look at $seen_k$ which is more high chaos than that of low chaos and as k_{seen} was a mix of low-high chaos our $seen_k$ is high-low chaos and that value is inclined towards high chaos than that of low chaos. So you might have a question what it might mean to our mathematics how does it relate? well k_{seen} is a state in which the outcome is chaotic but in low chaos which means $k_{seen} = k_{h_1}$ this tells us that the value we got is closer to high chaos and will get into high chaos i.e outside intersection region. Same goes with $seen_k = seen_{kl_1}$ this expression tells us that we are close to low chaos and will get into low chaos i.e outside intersection region.

5.3 Chaotic Members are Zero/All Equal only if Un is Zero/All Equal

This property of chaotic numbers is pretty obvious so we stating it as an axiom since all the members like $seen_1, \ldots, seen_h$ and $k_1, \ldots, k_l$ of the chaotic set

$\mathbb{U}\ltimes = 0$ or $\mathbb{U}\ltimes$ has same element throughout, then members of Un are equal to each other.

$$\bigcup_{h=1}^{\infty} Seen_h + \bigcup_{l=1}^{\infty} K_l = 0 \implies seen_h = k_l \implies seen_1 = seen_2 = \cdots = seen_h, k_1 = k_2 = k_3 \cdots = k_l \iff \forall a \in \mathbb{U} \tag{1}$$

$$\bigcap_{h=1}^{\infty} Seen_h + \bigcap_{l=1}^{\infty} K_l = 0 \implies seen_h = k_l \iff \forall a \in \mathbb{U}\ltimes = 0 \tag{2}$$

For more reference [22]

6 Theorem 1

6.1 Entries in Low chaos are not far apart but entries in High chaos are very much far apart.

6.1.1 Proof:

Theorem states that ɲ, chaotic numbers k_l and $seen_h$ low and high chaos have entries in each set depending on the type of chaos. we know $k_l seen_h \in Un$ by definition of chaotic numbers we can say that each k_l in low chaos $seen_h$ has ascending increasing chaos by Axiom (1).

eg: $k_1 < k_2 < k_3 < k_4 \ldots k_l$

$seen_1 < seen_2 < seen_3 < seen_4 < \cdots < seen_h$ (By postulate (2)) each is a set and any set operations can be performed (by postulate (5)) So, we will define entries and prove this theorem. $k_1 = \{0.00025, 0.00002894, -0.00000975, 0.265, -0.125479, -0.125i, \ldots\}$ now if you compare 1st and 2nd entries in k_1 we can see that those are not that far apart from each other and we can say the same for all the elements inside k_1 because it's chaotic number is 1 and not 2 because on k_2 will have a different chaotic entries and the speed of entries will differ.

Let's see for high chaos,

$seen_1 = \{0.00265, -1.5698763, 0.80, -0.09654, 1.236i, \ldots\}$

Now if we compare high chaotic $seen_1$ 1st and 2nd or any other element we can see that the elements are very far apart from each other. And you might want to know how a maximum high and low chaos would look like? let me show you Low Chaos: $k_l = \{49.365, -56.23, 8.56i, -150.6, 250, -78i, 5i, \ldots\}$ High Chaos: $seen_h = \{0.6, 56981.598, -56i, -98i, 8, -0.23, \ldots\}$

Now as we can see Theorem 1 is proved and entries in low chaos are low and entries in high chaos are very high.

Hence Proved.

7 Theorem 2

7.1 Dvectors runs and fills up the space (Cplane).

7.1.1 Proof:

We will start by understanding what is meant by a "Dvector" well our classical mathematics has vectors for example or these vectors only can say you a direction and magnitude and it's static meaning if I change the space in which pointed horizontally into vertically well now the vector is useless in direction. Take an example of a car moving horizontally and and represent it's direction and magnitude a long as the car is static/constant the vectors are correct but now I will make the car chaotic meaning now the car runs in a chaotic pattern now both the vectors are now useless. But I have a solution for this I am introducing **Dvectors** vectors with 2 heads and no tails. These vectors are represented by

$$x_d, y_d, z_d$$

which has endpoints x_d has x, x' and same for y_d, z_d which are fixed by postulate (3) and in between endpoints we have inifintly many dvectors which are low and high chaos depending upon movement of the chaos we are calculating. As the theorem says the Dvectors runs by runs I mean scaled, squished, curved etc all types of chaotic patterns are performed by the midpoints of our dvectors.

Now, Let's imagine a 3D space and define our dvectors x_d, y_d, z_d each has endpoints $x_d = E(x), E(x')$ and we have midpoints between them let's call them $m_1, m_2, m_3, \ldots m_n$ so,

$$\sum_{E(x)}^{E(x')} x_d \tag{3}$$

tells us that from endpoints $E(x)$ to $E(x')$ which will be summed all the midpoints between our endpoints and 3 tries to fill up our 3D space but it can't this is the reason we need all 3 dvectors to fill up our space. Now we need,

$$\sum_{E(y)}^{E(y')} y_d \tag{4}$$

which will help our **??** to fill our 3D space and the same with our last third dvector,

$$\sum_{E(z)}^{E(z')} z_d \tag{5}$$

Our theorem stated the statement that Dvectors fills up the space and looking at equations 3 4 5 we can see that x_d, y_d, z_d fills up the whole 3D space with the help of chaotic midpoints and endpoints so our theorem here is proved. **Hence Proved.**

8 Theorem 3

8.1 A triangle, line, circle are stable in the k_l and not in sin_h and are not static (preserve shape).

8.1.1 Proof:

We know by postulate 4 that end points in the chaotic plane are fixed.

Let x, y, z be the points in both the space k_l and sin_h

In k_l space, $E(x)\ E(y)\ k_l = EyEx\ (k_1,\ k_2,\ k_3,\ \dots)$

with increase in low chaos the points between $E(x)$ (Endpoint of x and $E(y)$ (Endpoint of y) changes low chaotically).

Since by low chaos definition we know that low chaos doesn't move fast and is slower very slower so the $E(y)$ and $E(x)$ being fixed the midpoints of k_l changes low chaotically which in return preserves shape and if we were to do this in sin_h we know the first chaos of the sin_h it changes rapidly so the shapes can't be preserved.

Hence Proved for a Line and it's stable in k_l

A circle in k_l with $E(x)$ and $E(y)$:

We join $E(x, y)$ to create a circle from the line which is stable in the above proof.

$E(x, y)\ k_l = E(x, y)\ (k_1,\ k_2,\ k_3,\ \dots)$ Since we are calculating a circle in low chaos which is not the same as our coordinate geometry circle with $\pi\ r^2$ will we get the same answer? I think you know we can't get it because we are no longer in classical math where we have constant numbers like $1, 2, 3, 4, \dots$ we are in chaotic plane and things are different here so how can we define a circle in Cplane?

we know π is Circumference / Diameter and we know for our circle which is made of bunch of k_l points and we know by postutlate 4 that end points in Cplane are fixed and we already have our endpoints of our circle which were $E(x)$ and $E(y)$ and for circle we made it $E(x, y)$ which is our circumference.

We can now sum up all the midpoints which are not fixed from $E(x)$ to $E(y)$ we get,

$\sum_{E(x)}^{E(y)} k_l = k_3$ since k_3 is the third low chaotic number and by looking at set of first chaotic number above we can say we will find 3.14 around k_3.

Hence proved circle in k_l plane.

Proving triangle with Pythogarus Identity in Cplane:

$E(x)$, $E(y)$, $E(z)$ be the endpoints points of a triangle in a Cplane.

As we did it for circle by attaching endpoints by $E(x, y, z)$ is our triangle in a Cplane.

A line is defined by $E(x)\ E(y)\ k_l = EyEx\ (k_1,\ k_2,\ k_3,\ \dots)$

so we can define pythogarus identity in Cplane:

$$\sum_{E(x)^2}^{E(y)^2} k_l = \sum_{E(y)^2}^{E(z)^2} k_l \sum_{E(x)^2}^{E(z)^2} k_l \tag{6}$$

Base^2 + Perpendicular^2 = Hypotunuse^2
for a unit triangle (Classical): $1^2 + 1^2 = \sqrt{2}$
for a unit triangle (Un Math): $1^2 + 1^2 = 1.41$
Hence Proved triangle with Cplane Pythogarus Identity

9 Theorem 4

9.1 $seen_h$ high chaos vector space and shapes is not preserved in $seen_h$ because of high chaos.

9.1.1 Proof:

By postulate 3 we know $seen_h$ has a very high chaos although endpoints are fixed in the chaotic plane we know midpoints are insanely chaotic in $seen_h$ (high chaos) we can never find what patterns or shapes $seen_h$ space is giving us so we introduce **Chaotic vector space**

As we know from our linear algebra knowledge that you need $\vec{v}$ which is a single vector in a vector space which tells you about the magnitude and a direction. if we need to show opposite directions then you need another vector say $\vec{w}$ which will point in opposite direction and now we have 2 different vectors to show the same thing and of course the math we study today is static and constant linearly we calculate something which has effected quantum world largely because its dynamic and chaotic in nature. As you know we are in this theorem to prove chaotic vector space and we can't use the traditional vector space with multiplying **scalars** and **vectors**

We know that by postulate 3 endpoints in a chaotic plane are fixed.
Let x and x' be a Dvector (double vector) in $seen_h$ space.
Let y and y' be a Dvector in $seen_h$ space.
And z and z' be a Dvector in $seen_h$ space.
We know $seen_h$ cardinality is $\aleph 3 >>> \infty$

Classical math vectors have scalars that multiply with vectors to scale with some factors. eg: $2 \cdot \vec{v}$ which will extend the vector $\vec{v}$ by a factor of 2 and enlarge it. but we don't need any scalars for our chaotic vector space since they are in chaotic nature and they scale and descale on thier own so scalars are just out of question in chaotic vector space.

Now as we are in high chaotic plane we know that x and x' (Dvectors) have $E(x)$ and $E(x')$ as endpoints and there are infinitly many midpoints between them which have chaos $seen_h = \{sin_1, sin_2, sin_3, \ldots\}$ each sin_1 has chaos bigger that the next and all of them are midpoints inside or all Dvectors.

For explaining this chaotic vector space I would like to take a bizzare example of a fluid any fluid water, honey, oil, with any viscosity and pressure we just want to model our Dvectors so they can work properly.

Let's define our endpoints for our Dvectors $E(x)$, $E(x')$, $E(y)$, $E(y')$, $E(z)$, $E(z')$ be the end points of our Dvectors x, x', y, y', z, z' illustrated below is our $seen_h$ space.

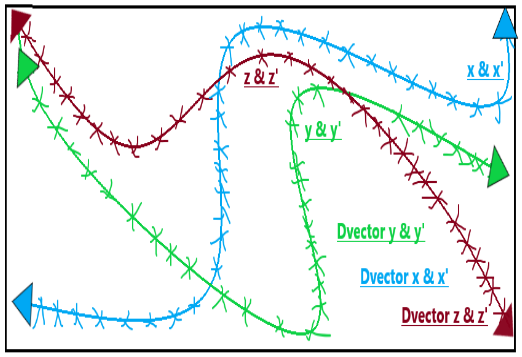

Fig (b) it illustrates all 3 Dvector with their distinct color with no tail and both side heads of vectors and X's on the figure shows all the midpoints between their endpoints.

Now let's throw our three Dvectors inside $seen_h$ space to model our fluid.

We know endpoints are fixed and midpoints changes with high chaos in Theorem 1 we proved circle for low chaos and we will use that analogy of endpoints and midpoints and summing them all up but summing doesn't mean we are adding all the $seen_h$ values but we are actually modeling by: $\sum_{E(x)}^{E(x')} seen_h + \sum_{E(y)}^{E(y')} seen_h + \sum_{E(z)}^{E(z')} seen_h = A_{seenh}$

where A is the fluid model we are modeling. This shows that x, x', y, y', z, z' all the Dvectors and their respective endpoints and midpoints works together to fill up the whole space A. And all the midpoints also are double vectors with ablity to stretch from both sides and fill up all the space A to model our fluid. Each dvector in model has equivalent midpoints and endpoints which goes to $\aleph 3\ \infty$.

midpoints changes with $seen_h$ chaos and each of them will be represented as $\sum_{E(x)}^{E(x')} seen_h$ which says that summation of midpoints of dvector x, x', y, y', z, z' will yield a value which fills gaps left by $\sum_{E(y)}^{E(y')} seen_h$ and $\sum_{E(z)}^{E(z')} seen_h$ now we know how we can model a fluid with dvectors and chaotic vector space to summarize we use three dvectors x, y, z and their respective endpoints $E(x)$, $E(x')$, $E(y)$, $E(y')$, $E(z)$, $E(z')$ we sum up all the midpoints with respect to endpoints and we get our equation which is:

$$\sum_{E(x)}^{E(x')} seen_h + \sum_{E(y)}^{E(y')} seen_h + \sum_{E(z)}^{E(z')} seen_h = A_{seenh} \tag{7}$$

short note: This is not our normal summation we are not actually adding up value we are showing that between x, x' all the chaotic points i.e $seen_1$,

$seen_2$, $seen_3$, $seen_4 \ldots$ are moving at high chaos and for this reason $seen_1$ is a dvector and value of $seen_1$ will define the trajectory of x, x' since they are fixed.

10 Theorem 5

10.1 A Quantum Particle in free space can be easily calculated in chaotic plane.

10.1.1 Proof:

Let A be a free quantum particle. Each movement, momentum, superposition everything is plotted on our chaotic plane.

And since we know from 3.1 we have two sides to our chaotic plane k_l and $seen_h$ low and high chaos respectively. All the movement and everything about the particle will be plotted on their respective sides a low chaotic movement will be plotted on k_l and high chaos will be plotted on $seen_h$. below is the 10.1.1 illustrated

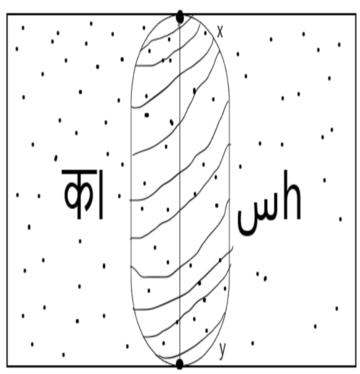

Fig (c) showing the **intersection of earth** area and points plotted low for low chaotic side and high for high chaotic points.

Since by postulate 5 we know we can perform any operation we want on k_l and $seen_h$ so we can perform intersection operation and we can call it **intersection of earth** because just like in the entire universe their is high chaos and on earth their are high and low both chaos at the same time so we can call it that as in 10.1.1 we can see points xy which are any points on the intersection between k_l and $seen_h$ in the middle as we only check the intersection earth area where particle was low in chaos and high that region is where our answer lies of what is the position of our free particle?

So our equation is,

$$k_l \cap seen_h = k_{seen}\dot{s}een_k. \tag{8}$$

by postulate 6 we know Cplane is a Zero set $\{0\}$.

Lets pose a question about about our quantum mechanical particle A find it's exact position which is the position which is most visited in superposition and have most visits in entire intersection earth area. Lets name our region Z and now assume x, y any point on Z region which will help us get our desired answer we know $x, y \in Z$ Now we will use x, y to our advantage and with the help of these points $\in Z$ we can find the state $\langle \uparrow \mid \downarrow \rangle$ which in classical math is called superposition state. and we need to find our particle A in the same state and position at which it visited the most in our chaotic plane. which means we have in our chaotic plane all the collapsed state a quantum particle collapses to either of these states $\langle \uparrow \mid \downarrow \rangle$ and we have all the collapsed states with us which are points on chaotic plane instead of finding positions of particle visited the most we can find the most collapsed state between $|0\rangle, |1\rangle$ which state occurs the most and we need a generalize state of our free particle in space. and we know wave function collapses and its probability is given by $|a|^2 + |b|^2 = 1$ where $a, b \in \mathbb{C}$. Now we know that intersection of Earth region has low chaos plus high chaos points which will have state $\langle \uparrow \mid \downarrow \rangle$ and as we know we have collapsed states inside Cplane so we need to find collapsed generalized state and position of A we will name that i.

$$Mov_{x,y \to 1} Z = A \tag{9}$$

Equation 4 states that take points $x, y \in Z$ region endpoints which are fixed by postulate 4 making **intersection of Earth** infinitely smaller till it goes to i which is the desired point we need from intersection of Earth region and Mov function moves the points $x, y \to i$.

To Summarize the theorem we use our chaotic plane to find the exact state/position of a particle by focusing on the intersection of earth section where you have low and high chaos and you can guarantee that the desired state/position of the particle is inside our Z region and we name our desired state/position i which will now have a particular point in Z region where i is our exact output and we now take endpoints of Z region and and name them x, y and use our Mov function to move $x, y \to i$ to i which is the point in question our 8 has the information about intersection of chaotic plane and 9 finds the desired output.

Hence Proved

11 Chaotic Normed Space:

As mentioned [13] in the rules of functional analysis a space can only be considered as a normed space only if these conditions satisfy So **X** is consired to be normed space or vector space only if,

$$(a) x + y \leq x + y \forall x, y \in X \tag{10}$$

$$(b) \alpha x = \alpha x if x \in X and \alpha is a scalar. \tag{11}$$

$$(c)x > 0 if x \neq 0 \tag{12}$$

For a chaotic normed space. Let's call it **cX** be a non abelian vector space with dvectors (double vectors) $x_d, y_d, z_d \in \mathbf{cX} \subset \mathbb{U}\ltimes$ eqns 10 11 12 are the requirements for this to be a normed space lets start with (a) or eqn 10.

$$x_d = \sum_{x}^{x'}{}_{(seen_1 \to seen_h)(k_1 \to k_l)} x_d \tag{13}$$

The dvectors [1]where x_d is a double vector with 2 heads and zero tails x and x' are the position of the 2 heads whereas $seen_1 \to seen_h$ says that between x and x' there are chaotic numbers which are midpoints of x_d and $k_1 \to k_l$ is the low chaotic midpoints with high chaos $\sum$ is used from initial point of x_d i.e x till the x' the final or latest point of x_d. This sums up till the space is filled [2] Now for y_d,

$$y_d = \sum_{y}^{y'}{}_{(seen_1 \to seen_h)(k_1 \to k_l)} y_d \tag{14}$$

So eqn 10 is the property of normed space on **X** and we will use eqn 13 and eqn 14 to define norm space on **cX**,

$$x_d + y_d \leq x_d + y_d \forall x_d and y_d \in \mathbf{cX} \tag{15}$$

Now for property (b) or eqn 11 since we know that we don't need a scalar so α is out of the chaotic norm property we only need our x_d that will define our chaotic scaling, squishing, multiplying and everything a vector should do but with a very very minimal calculation errors or parameters. So (b) or eqn 11 is given by,

$$x_d = x_d / y_d since x_d, y_d \in \mathbf{cX} \tag{16}$$

And now for the final property (c) eqn 12 we get,

$$x_d > 0 if x \neq 0. \tag{17}$$

Hence chaotic normed space (**cX**) is a Linear Space or Vector Space.

11.1 Navier Usama Stokes Equation using Chaotic Normed Space:

Navier Stokes Equations demand a solution to a equation that both navier and stokes given and as for now only 2D problem of this has been solved I am not

[1]or Double vectors are the vectors which squishes squeezes or scales on it's on which means we don't need any scalars or any scalar multiplication to specify where dvectors should go they go with the flow of nature.

[2]filled: this word is used to describe a movement of double vectors the simple vectors only points in one direction whereas double vectors can point in ∞ number of direction so if we have a space $\mathcal{Y}$ the space Y is filled with x_d meaning the space $\mathcal{Y}$ has x_d filling up the space needed for calculation.

gonna give the exact answer to this Millennium problem as I solved for [4] but I will give you a different approach to see at this problem. I thought maybe we are looking at the problem in a wrong way so I just gave my theorem of 3D Cplane and I thought maybe I have solved [5] but again I won't claim I solved it I just gave an idea. Let $\mathcal{A}$ be a space of fluid, gas or any smooth viscous dense quantity.

By chaotic norm space we know, eqn 15 and this equation alone $x_d + y_d \leq x_d + y_d \forall x_d and y_d \in \mathbf{cX}$ proves that individual dvector norms fills more space and much better than combined norm of dvectors so we will define $\mathcal{A}$ as,

$$\mathcal{A} = x_d + y_d + z_d + a_d + b_d + \cdots + n_d \tag{18}$$

$\mathcal{A}$ has infinitly many dvectors and all of them are given by,

$$\mathcal{A} = \sum_{x}^{x'} {}_{(seen_1 \to seen_h)(k_1 \to k_l)} x_d + \sum_{y}^{y'} {}_{(seen_1 \to seen_h)(k_1 \to k_l)} y_d + \sum_{z}^{z'} {}_{(seen_1 \to seen_h)(k_1 \to k_l)} z_d + \sum_{a}^{a'} {}_{(seen_1 \to seen_h)(k_1 \to k_l)} a_d + \sum_{b}^{b'} {}_{(seen_1 \to seen_h)(k_1 \to k_l)} b_d + \cdots + \sum_{n}^{n'} {}_{(seen_1 \to seen_h)(k_1 \to k_l)} n_d \tag{19}$$

$\mathcal{A}$ has like all the dvectors each dvector has a capacity to fill and run till infinity and when all of these dvectors combine and keep moving in space and time this will model the true nature in $\mathbb{R}^3$ 3 Dimensions the problem of Navier Stokes Equation was the equation was going through a hard time if tried for $\mathbb{R}^3$ this is the reason I propose this method and a way to look at physics mathematics with the lens of chaotic numbers. This section introduced with chaotic norm which help us look at Navier Stokes Equation with a new perspective. **Hence Proved Navier Usama Stokes Equation new approach.** ■

12 Theorem 6

12.1 Using More than one 3 dimensional chaotic plane to calculate bigger uncertainty:

12.1.1 Proof:

Consider a big uncertainty, weather, fractrals, fluid, smoke, etc any uncertainty which is big in size and seems to be impossible task to solve.

Let's call that space $\mathbb{V}$ Now as we know we have a chaotic plane with two sides low and high chaos k_l and $seen_h$ respectively and its a single plane with chaotic sides each plane has dvectors uncertain points plotted as per need and that single plane can calculate a free particle uncertainty as we did in theorem 3.

Now we know by postulate 7 that we can take more than one Cplane and arrange them any way we like so I would like to take infinitely many Cplanes and arrange them one below the other and beside each other so low and high chaos don't mix up in the process just like shown in the **??**.

for a single Cplane in terms of double vector chaotic plane is.

$$A_{seenh} + B_{kl} = 0 \tag{20}$$

we got 7 from theorem 4 and the 9. As we got A_{seenh} we can get for low chaos as well we will call it B_{kl}. 20 states that low and high chaos are together to form single chaotic plane.

In $\mathbb{V}$ we have infinitely many 20 single planes all over the space $\mathbb{V}$ every point in the space is filled with infinitely many and small our 3D Cplanes and simplified equation 5 remember that each $A_{seenh} = \sum_{E(x)}^{E(x')} seen_h + \sum_{E(y)}^{E(y')} seen_h + \sum_{E(z)}^{E(z')} seen_h$ so it is simplified to get equation 5. Each plane has x, x', y, y', z, z' endpoints and Dvectors x, y, z we know these are the endpoints of a single plane dvector field which fills up the whole plane to give us A_{seenh} which is the value after calculating all the $\sum midpoints$ from the endpoints. Now we are going to use **Integration** like never before to calculate big uncertainty now let's start by intuitively understanding what we are trying to do.

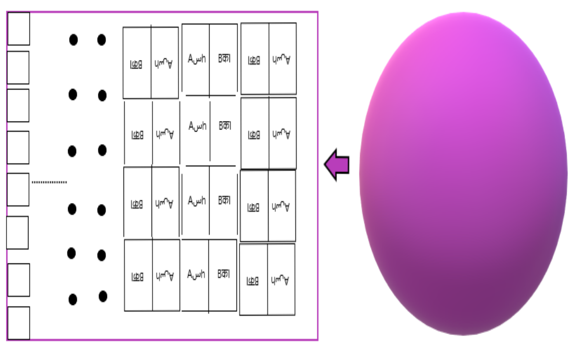

Fig (d) The purple sphere is our $\mathbb{V}$ space which is opened up for better view we can see Cplanes arranged infinitely many and small to cover our $\mathbb{V}$ space.

In 12.1.1 we can see infinitely many Cplanes arranged such a way we will now add up all the infinitly many Cplanes we can write as,

$\mathbb{V} \approx (A_{1seenh}+B_{1kl})_1+(A_{2seenh}+B_{2kl})_2+(A_{3seenh}+B_{3kl})_3+\ldots(A_{nseenh}+B_{nkl})_n$

$$\mathbb{V} \approx \sum_{n=1}^{\infty}(A_{nseenh} + B_{nkl})_n \tag{21}$$

21 describes all the planes add up with $\sum$ to get $(A_{nseenh} + B_{nkl})_n$

$\mathbb{V}$ space has infinitely many of these single Cplanes and as I mentioned above we will be using integration so we need upper and lower bounds for our integration to work. Now we get,

$$l = (A_{1seenh} + B_{1kl})_1 - LowerBound. \tag{22}$$

$$h = (A_{nseenh} + B_{nkl})_n - UpperBound. \tag{23}$$

Now that we have lower and upper bounds from which plane to plane we are going to calculate;

$$\mathbb{V} = \int_l^h \mathbb{V} dV \tag{24}$$

This integral will calculate all the Cplanes in each frame and get us volume of the whole space $\mathbb{V}$.

To let you know what we just defined let me elaborate more to you on a classical math vector field we know that you have one vector say $\vec{v}$ this vector is single vector with only one information, direction and magnitude now we are doing this in Cplane and we have Dvectors (double vectors) and each plane i.e $(A_{1seenh} + B_{1kl})_1$ has 3 endpoints x, x', y, y', z, z' and their respective dvectors x, y, z which will yield chaos in just that space as we have n number of these planes and dvectors the amount of chaos is actually huge and equation 8 looks simple but you know the amount of chaos and uncertain information it carries. and we know by postulate 2 this is bigger than infinity $<<< \aleph 3$ so the chaos and uncertainty it carries has numbers we don't even know yet.

Hence Proved

13 Quantum Computing with Uncertain Mathematics.

13.1 U-QC Gates and Un Equations for QC.

13.1.1 Traditional Bell States:

This section is with the help of [19], Our hadamard has the equation $1/\sqrt{2}\,|0\rangle + |1\rangle$ where $1/\sqrt{2}$ is the amplitude of our quantum qubit. and $|0\rangle + |1\rangle$ is knowm as superposition of the states. This is represented on the bloch sphere z axis in bloch sphere represents $|0\rangle$ and the south pole is our $|1\rangle$ which makes our hadamard gate equation also known as bell states in between our bloch sphere. Now I would like to talk to you about "Erwin Schrödinger" [7] and his thought experiment, a hypothetical cat may be considered simultaneously both alive and dead as a result of its fate being linked to a random subatomic event that may or may not occur. This really explains our superposition state of bell states.

In quantum computing [19] we use the concepts of quantum mechanics and computer science to compute and this method was first proposed by Richard Feynman and now that we are where IBM and Google and China are making quantum computers where we are using more than hundred qubits but we are not even close to achieving a commercial quantum computer so I originally made this mathematics to solve our quantum computing problems. The errors while working on QC are very high 90% of the time you are encountered with errors per cycle of qubit calculation imagine the amount of error now. So I have developed some of these techniques that might reduce errors by 90% to 95% in theory it's working absolutely fine but as the independent researcher I lack the experimental side. Now let's start by defining our Un mathematics for QC my proposed method.

13.1.2 Quantum Computing concepts for classical math.

Let's look at our theorem 5 8 where we can see $k_l \cap seen_h = k_{seen}\dot{s}een_k$. which says that inside intersection of earth region we have low-high and high-low chaos refer Axiom (2). Now that I have layed down what we have and what we are up against we will formulate some algebra for Un Math for QC before this I would like to compare some of the traditional QC methods with classical math and then we will see for my Math.

Traditional QC concepts: The things you need to know [19] are pretty basic so there are Qubits one or more, Qubits are in superposition state, Qubits are entangled, Qubits are represented on bloch sphere, Qubits have probabilty amplitude whose norm squared is always 1 like $|\alpha|^2, \alpha \in \mathbb{C}$ pretty much this sums it up now when we use these methods it really gets messier and messier as you need phase factors and inner products of states outer products then if you have $|1\rangle$ or $|0\rangle$ and you wanna represent it in the hadamard gates and CNOT gates the things are really messy but they work it out and still we have bunch problems ahead of us.

13.1.3 Defining Superposition on Cplane.

Let $A = q_1$ (q_1 = single qubit). As q_1 is a qubit it has superposition and if it has superposition then it will be uncertain while using it as a computable bit. so we denote our quantum qubit in terms of quantum mechanics as $|0\rangle + |1\rangle$ [19] which has probabilty amplitude attached to each say α and β which $\in \mathbb{C}$ now as we saw in the theorem 5 we had our 9 which uses Mov function to get our desired value that theorem will be very useful in our QC with Un Math.

We place q_1 inside our Cplane which will contain all the possibility plotted (this paper shows how marginal probabilities of locality condition but my method is much better) [18] on our Cplane (Chaotic Plane) till $\aleph 3$ by theorem 3 we know that Cplane has intersection of earth region and x, y points as points which will close and approach the limit provided by you. so,

$$k_l \cap seen_h = q_1 \tag{25}$$

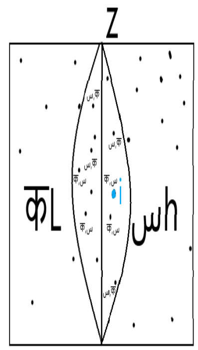

Fig (e): k_{seen} and $seen_k$ are inside the intersection of earth called Z region and points outside Z region are chaos which is unseen and unwanted. point in blue is i the point we want for our q_1 qubit equation.

And we know that our q_1 is a single qubit which is in superposition. Now let's call our intersection of earth Z region.. If $q_1 \in Z$ then $\exists i \in Z$ which is equal to $q_1 = |1\rangle$ OR $|0\rangle$ which we will denote by,

$$(_{i=1}q_1 = 1 \tag{26}$$

$$(_{i=0}q_1 = 0 \tag{27}$$

As seen in the above figure Z region is the intersection of both low and high chaos and as I have given the definition of intersection of earth before explaining why we named that you might have an idea what's really going on let me explain.

Now as you know q_1 is in superposition state that is interacting with the surrounding and it's position as well as the momentum is not stable at all and of course it's state is also not stable. In Quantum Mechanics we have Heisenberg's uncertainty principle which says that there is a limit to accuracy on finding the position of a particle and the momentum. These traits of a Quantum particle is what stops us from achieving a functional quantum computer. And we have a lot of complexity surrounding gates of QC and their circuits the struggle is real. But what I just proposed in 25 and 26 we can get the state $|0\rangle, |1\rangle, \langle 0|, \langle 1|, |0\rangle + |1\rangle, \langle 0| + \langle 1|$ all the possibility of a single qubit without any hassle.

13.1.4 U-Z Gate for QC

We can find the exact collapsed state of our q_1 by choosing any $x, y \to i$ this term means that moving our endpoints $E(x), E(y)$ approaching to i to our desired collapsed value. Which gives you $A_{k,seen}$ we will call it just A so it will be easier to perform some algebra.

$$Mov_{x,y \to i = |o\rangle, |1\rangle} Z = Aq_1 \tag{28}$$

This equation actually tells us that, Mov points x, y to the desired point in Z i.e i and our $i = |o\rangle$ or $|1\rangle$ or any other state of our qubit. So our qubit can be in k_{seen} or $seen_k$ refer Axiom (2).

U-Z Gate for single qubit q_1:

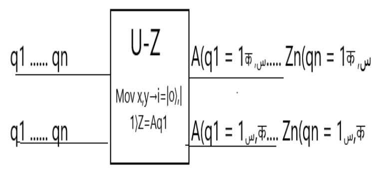

Fig (f) Our input is q_1 and it gives out the output Aq_1. Z gate in our traditional QC math consists of Pauli matrices Z from X, Y, Z both are very different as Z gate gives you the phase change in traditional QC math. U-Z gate will give you the precise value of qubit we desire.

Truth Table for U-Z Gate:

heightq_1	Z	$A(q_1$
$0_{k_{seen}}$	$Mov_{x,y \to i=0} Z = 0$	0
$1_{k_{seen}}$	$Mov_{x,y \to i=1} Z = 1$	1

Looking at our truth table and 13.1.3 you can have a pretty geometric intuition on what we just defined. Given a single qubit gate in traditional QC and classical math we have vectors those vectors have braket notation and we perform Pauli matrices on them namely X, Y, Z then we have a bloch sphere representation on that qubit we have to keep track of the phase we have to keep track of the qubit not changing so we build up circuits on them using hadamard, X gate, Y gate and Z gate but all those worries have disappeared. In theory and on paper this method certainly works. We will next define Two Qubit states on Cplane and Un math.

13.1.5 Cplane Two Qubit States and Algebra:

Cplane has all possible states of any number of qubits you need and are plotted on the our Cplane as we need 2 qubits now to define our 2 qubit state. Let's call our 2 qubits q_1, q_2 each qubit is on a different Cplane we defined our single qubit above as $A(q_1$ which means that our qubit q_1 is inside our Cplane A and now that we have 2 qubits we can call it's Cplane's as A and B.

$$(q_1 + (q_2 = A(q_1 + B(q_2$$

$$= A(_{i=0}0 + B(_{i=1}1$$

$$= AB(00 + AB(01 + AB(10 + AB(11$$

As I said and you can refer 13.1.3 that we have our Cplane our Z region and which consists of k_{seen} and $seen_k$ and variable i represents our desired state of q_1 the same we are applying to our 2 qubit state in the above algebra done we can see that there are 2 Cplanes namely A and B which is then attached to our 2 qubits q_1 for A and q_2 for B which means that all the states of q_2 is inside Cplane B and we are taking the classical bits formation $00, 01, 10, 11$ to represent our Un QC algebra so it's easier for us to understand what really is going on. Now that we have our equations in place I will build a Truth table for our 2 qubit state.

Truth Table of 2 Qubit states:

q_1	q_2	Z	$Aq_1,\ Bq_2$
$(0$	$(0$	$Mov_{x^2,y^2\to i=0,0}Z = 00$	$AB(00$
$(0$	$(1$	$Mov_{x^2,y^2\to i=0,1}Z = 01$	$AB(01$
$(1$	$(0$	$Mov_{x^2,y^2\to i=1,0}Z = 10$	$AB(10$
$(1$	$(1$	$Mov_{x^2,y^2\to i=1,1}Z = 11$	$AB(11$

You can see in the table above that we are using x^2, y^2 that ^{2} indicates we took 2 Cplanes and those Cplanes had 2 different x, y points to approach to our variable i. Now our equation is,

$$(q_1 + (q_2 = A(q_1 + B(q_2 \tag{29}$$

13.1.6 Multi-Qubit States in Un Mathematics:

We defined single qubit equation, truth table, symbol and we moved to 2 qubit state and we did the same with 2 qubit states now I will define n number of qubits in other words multiple qubit states in a Equation.

$$SingleQubit = (q_1 = A(q_1$$

$$TwoQubit = (q_1(q_2 = A(q_1B(q_2$$

As we gave names to our Cplanes as A, B for n number of qubits we will define $A, B, C, D, \ldots Z, A_n, B_n, C_n, \ldots Z_n$. each of them is a Cplane which has a single qubit inside each Cplane. So as we have n number of Cplanes we need n number of x^n, y^n points to approach our i. we can define this by as our qubits increase $q_1, q_2, q_3, \ldots$ we have $A \cdots \to Z_n(0 \ldots 0 \to 1 \ldots 1)$ and it's endpoints x^n, y^n and n number of Cplanes. Our equation is.

$$(q_1 + (q_2 + \cdots + (q_n = A + B + C + \cdots + Z_n(q_n \tag{30}$$

13.2 All Quantum Gates in Un Mathematics representation.

13.2.1 Usama's Z Gate:

Creating a U-Z gate with N number of inputs and N number of outputs where U stands for both Un Math and my name Usama. The Z gate in traditional QC has a phase change operation but when you talk about my Z gate it takes qubits in whatever state we don't care about that and perform a Mov operation which will give us any state you desired. Since our Cplane has all states of qubits and we just take intersection of low and high chaos this actually yields 2 outputs by Axiom (2) one being 0_{k_seen} called low-high state which is actually a correct state (desired) and one being 0_{seen_k} called high-low this gives us a state which is more in high chaos than in low so we can't rely on that state but it will be used in entanglement. How you ask? well you already know that q_1 through q_n n number of qubits goes into U-Z gate and you get what you wanted and there is the high-low part of the U-Z gate and all Un math gates as it's the only method we have to get the exact state of a qubit so that part of our U-Z gate is always remained but as you might be knowing entanglement is when our qubit is actually connected to it's entangled state which means in traditional QC entangled states can be explained as $1/\sqrt{2}\,|00\rangle + |11\rangle$ which is saying when the state $|00\rangle$ is given which means the entangled state of this state is $|11\rangle$ which is understood due to the same reason as entanglement is just this what we explained the qubits actually talk to each other and that's what made QC so powerful than our classical computers and also difficult due to the same reason but worry not I got a brilliant solution to this. Since what we are making now is a U-Z Gate with n number of qubits. I will show you can refer 13.2.1. In the first input we have $q_1 \rightarrow q_n$ qubits which are feeded into U-Z gate which outputs k_{seen} (low-high) states/chaos which are the states that you told U-Z gate to find in Cplane now the entanglement happens when you have maximal pure/mixed state in the second output where the output yeilds $seen_k$ (high-low) states/chaos. Now both of them are entangled one with high-low and second with low-high. Remember that second input only outputs the high-low chaos which is why in 13.2.1 we see the output as 1_{seen_k}. The entanglement in general explains the phenomenon of one qubit entangled with another in a way that both have similar or opposite properties if one is 1 state other is definitely in zero state same goes with spin of a particle. Now as the second input only has the $seen_k$ state/chaos we will take the second output and put it through U-NOT gate which will be entangled with our output of k_{seen} since NOT operation just inverts the operation like $1 \rightarrow 0$ and $0 \rightarrow 1$ this method will be different from our traditional NOT operation we need to entangle our first output of U-Z gate with the output of U-NOT gate so output of U-NOT gate will be explained next.

Here is the Symbol, operation, and equation for our U-Z gate and we already showed this gate in both single and two qubit gates above:

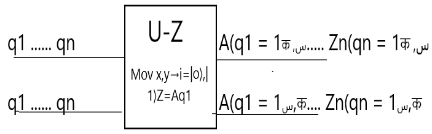

Fig (g): : Multi-Qubit U-Z gate Equation/Representation for U-Z gate:

$$q_1 \dots q_n = A \dots Z_n = A(q_1 \dots Z_n(q_n \tag{31}$$

13.2.2 Usama's U-NOT Gate:

The U-Z gate will be used first then comes the U-NOT gate to perform entanglement for a simple calculation of extraction of bits from a qubit our U-Z gate is enough but for entanglement and use the real beauty of quantum computing in action we need the combination of both gates and we have our first quantum circuit. Seeing the 13.2.1 and 13.2.2 the output from the second input gived you $seen_k$ chaos/state which then goes as a input to U-NOT gate and it outputs the flipped state as a NOT operation $q_2(1^{seen_k} \rightarrow q_2(0^{k_{seen}}$ which inverts the output from $0 \rightarrow 1$ or $1 \rightarrow 0$ and also NOTs the operation of chaos from $seen_k \rightarrow k_{seen}$ which tells us that the q_1 and q_2 are entangled and we can use this to our advantage to have faster calculations.

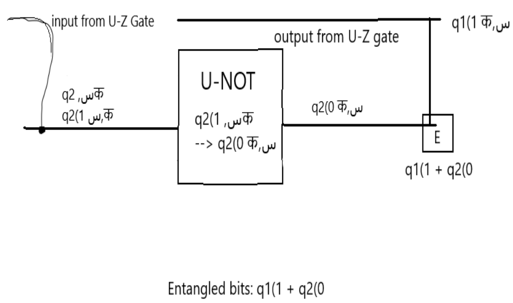

Fig (h): U-NOT gate for Entanglement between 2 qubits:

13.3 Grover's Search Algorithm with My Gates:

Grover's search algorithm is like the first algorithm to really capture the essence of Quantum Computers it uses a lot of traditional QC gates and mathematics to get the best search algorithm which finds the elements from the random set of numbers. And you know my mathematics itself is random so we will design our first oracle which is nothing but **Usama's Z gate**. Which gives us the desired output from the set of all uncertain qubits that is nothing but the definition of traditional oracle we use in today's QC.

We will use our k_{seen} and $seen_k$ as our set of random numbers and by definition of our ɲnumbers we can definitely use those as our set and now we will use our Cplane and Intersection of Earth concept to get our Grover's search work in my method.

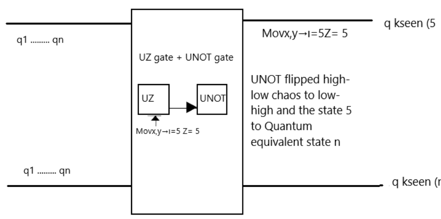

Fig (i): U-Oracle for Grover's Search Algorithm:

Looking the figure above we can see that we are using U-Z Gate and UNOT gate are added together to get our oracle which will take both *seen* and k chaos and find the desired value quickly.

$$k_l \cap seen_h = k_{seen}, seen_k \tag{32}$$

Intersection of Earth of low and high chaos is taken to get 2 values which is our U-Z gate equation to get the low-high and high-low values from U-Z gate now this is taken and added to our UNOT gate to entangle the qubits now our Grover's Search Algorithm demands the search in the random set we got our desired value from the first output of U-Z gate which finds any value we desire but also gives us the high-low chaotic terms which is then fed into the input of UNOT gate which flips the chaos and the state in which we found which is the same result as doing a entanglement in today's QC math and methods.

Now for example we need the number 5 inside our set of random numbers or ɲnumbers we will set the value of $i = 5$ which will help us find the exact number inside that random/chaos now we use our Mov function:

$$Mov_{x,y\to\imath=5}Z = 5 \tag{33}$$

We have already solved the Grover's Search algorithm without any non-intuitive method.

13.4 Shor's Algorithm with My Method:

As you know Shor's algorithm is the algorithm which really outperforms classical computers on the classical computer it takes the complexity exponential which is very large and on QC it will be polynomial time complexity. Now keep in mind we use what is called QFT (find's period of a function) to solve shor's algorithm with the combination of Hadamard gates and UROT (rotation) gates to get QFT and use QPE (Quantum Phase Estimation) to inverse that operation now we use that and perform calculations on our traditional QC which gives us various states for say $|x\rangle = |x1\rangle, |x2\rangle, \ldots, |xn\rangle$ which is then passed to a hadamard and then to the UROT gate this cycle continues which a really long process just for the QFT then we perform actual Shor's algorithm which takes more time approximately $O(n^3)$ roughly.

Remember we don't even care for measurement in my method we just get what we want with U-Z gate or U-Oracle (used in grover's search algorithm) so my method is much much easier no excess use and abusive notations and unnecessary use of gates. And please keep in mind I won't do the classical part of the algorithm you can check the classical part.

Now how will my method work? There are 2 parts to calculate the shor's algorithm one is the classical part done by a classical computer and another with of course our quantum computer now the part in traditional quantum computing meaning the method we use now uses superposition and entanglement to get the period of our algorithm. As you know any odd prime number when divided gets stuck in a period some might explain it as $1 \to 1$ which means whenever you got 1 the next in line 1 is our whole period from one to one. So now that you know what period is I will go through the traditional method very quickly now we take any number say N that number will have a period the period for let's say 15 is $|0\rangle, |4\rangle, |8\rangle, |12\rangle$. Now these are the only values that are left due to calculations from the Oracle of traditional QC so these values are called the equally likely probability of getting every number which in my opinion a lazy guess, So that's how we got the period which is the hardest part of our algorithm this alone takes exponential time classically now let's see my method:

13.4.1 Now the steps to calculate with My method of shor's algorithm includes:

- We will use our U-Z gate to get all the values that is a period say $|0\rangle, |4\rangle, |8\rangle, |12\rangle$.
- This U-Z gate as you know has 2 output register the second output register get's the same values but in high-low chaos which will next sent to the U-NOT gate to flip the chaos and the values.
- Together they formed the U-Oracle which yeilds values that are needed in our case the period and the next register yeilds the same values which means the second register output and the first register outputs are entangled so we have our CONFIRMED answer as we got our period.

This should have cleared how powerful my mathematics and theories are this concludes the Quantum Computation with Uncertain Mathematics section next we will see Quantum Register, Quantum Capacitor and a Quantum Processor.

13.5 Quantum Resistor:

This component was important to add to my quantum computer as I think practically the computation on my QC will be a little slow because we are searching and getting the desired state inside a U-Z gate or U-Oracle the practical approach might be a little slow so I decided to add a necessary component to my QC a Quantum Resister though sounds familiar to the traditional resistor component used in electrical circuits though has a different functionality.

Quantum Resistor will be used before Quantum Capacitor which we will look at in next section that stores healthy qubits inside just like a electrical capacitor stores current now before this process we need to go through our Quantum resistor which will filter out damaged quantum particles/qubits by damaged I mean very much affected by environment which will create numorous problems when any Un gates applied so wee need clean qubits to work with that are not damaged.

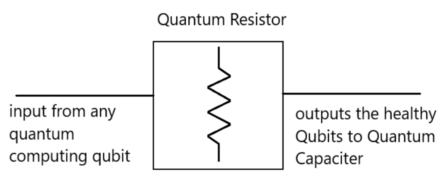

Fig (j): Quantum Resistor:

In the above figure you can observe that we are taking input as any quantum mechanical particle/qubit and it outputs a healthy qubit which is perfect for our Un gates to compute information in that qubit. If $qn(0, 1$ any state q is in $q_\phi(\times$ state which means the state was **noisy** and QR will get rid of that state to get noiseless calculations.

$$q_1 + q_2 + \ldots + q_n = q_\phi(\times \tag{34}$$

where $q_1 \to q_n$ are the qubits passed through quantum resistor and it outputs the $q_\phi(\times$ state (ϕ is any qubit with noise between the $q_1 \to q_n$) which was the qubit with noise and was eliminated from the n qubits passed through the QR.

13.6 Quantum Capacitor:

This component is placed after the quantum resistor which will store the healthy qubits and pass it to the Un Quantum Computer/Gates.

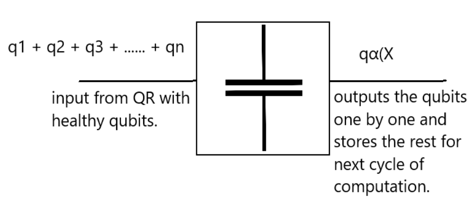

Fig (k): Quantum Capacitor:

Above figure states clearly that the inputs from the QR are all the healthy noiseless qubits our Quantum Capacitor stores them and passes one by one to the Quantum Gates or Computer. Which helps the Quantum Computer be busy and don't have to worry about the "bad states" coming to it.

$$Q_c = q_1 + q_2 + q_3 + \ldots + q_n = q_\alpha(\times \tag{35}$$

where (α is any qubit outputed) qubits $q_1 \rightarrow q_n$ are stored inside our QCapacitor which then will be outputing each q_α one by one to our Quantum Computer.

14 Results and Experiments:

I am 22 years old living in a small town in India when I stumbled upon a video on Youtube called "Quantum Machine Learning" by Siraj Raval and I saw him explain what qubits and Quantum Computing was. I was immediately attracted to the idea of faster calculations few months passed and I failed in Engineering Mathematics in my diploma in Computer Engineering after that failure I started to watch Professor Leonard Youtube channel and the way he taught mathematics was when I fully understood how amazing Newton and Leibniz were to create Calculus a mathematics of change. I started my journey of learning quantum mechanics and I saw how they use probability to solve a particle non locality problem then some lectures of Prof. John Preskill and NPTEL lectures for Quantum Computation how big of a deal it was to solve a Quantum Measurement problem then in the vaccation after semester I gave myself a deadline to find a new number system which will define uncertainty and chaos that's where this paper was born.

I first looked at this method as hook and point method the approach was to attach a bunch of hooks to every movement of a quantum mechanical particle and plot those movement on a plane and then find where particle visited the most but then I realised how unintutive the idea of hook point is and it's not unique it's yet another statistical technique but then I found out how a chaos is by looking at a smoke from a debris the smoke was very less and when that gas was sent into air the chaos was so high we can't even see the gas particles. This was the birth of low chaos and high chaos and then I was finding the proof of Riemann Hypothesis in the midst of my experiments with Quantum Computation that's when I realised how $\aleph 3$ infinitly many numbers have been plotted onto a Cplane and in the collection of such large chaos how can one find if all the numbers on critical line is zero then that experiment gave birth to the idea of intersection as in the middle of such large numbers and quantity I observed how a chaos is whatever is happening no matter how many numbers are governing this universe only the actions of present matters and I came up with intersection of low and high chaos which gives low-high and high-low values inside the intersection the high-low which will enter into the region of low chaos and low-high into high. This gave a meaning to my work of finding a new mathematics for quantum mechanics and computation.

The results I received after such intense experimentation's was amazing this method and approach opened a lot of new doors in my mind I found peace with the chaos and I was able to propose this method and solve Riemann Hypothesis and gave new meaning to Navier Stokes Equation. Most importantly I was able to just find any state of a particle with just getting the intersection of the values of particle as particle is uncertain and chaotic the particle has speed of either high chaos or low chaos or both which is our intersection region you see when we take intersection and find let's say $|0\rangle + |1\rangle / \sqrt{2}$ which is our $|+\rangle$ state inside bloch sphere we don't even care about collapsing of this state as we will just get the exact collapsed state of a particle inside my intersection region. This is just a proposed method of course with no experimental proof's but I believe this is the only way we can give meaning to chaos and uncertainty.

15 Conclusion:

This paper deals with how in quantum mechanics and computation there is a huge problem of measurement as we try to measure any particle it just collapses to a state opposite to it or any other this is the major problem in quantum computing which has stopped the growth of Quantum Technologies I tried to develop a new method other the probability to understand this quantum phenomenon with my new number system called chaotic numbers ɲwhich has it's own rules and techniques. This new method divides chaos into two parts called the low and high chaos and then if we need any state of a particle in the present state we can find by intersecting both and getting any desired value this also helped me to solve Riemann Hypothesis also Navier Stokes Equation. In riemann hypothesis we just place my Cplane inside the critical strip which then sees if the region is empty as Cplane is a all the plotted points till $\aleph 3$ if it's empty the Riemann Hypothesis is true and for Navier Stokes we just take one Cplane place it on any Big Uncertainty fluid gas anything and we place Dvectors (Double Vectors) which has low and high chaos midpoints which increases and we place infinitely many Cplanes on that space and simply integrate it to get the movement of that at every point in that space.

Future of my method's I encourage researcher's to look into my mathematics as it is immature and as a result of it's birth and I being alone working on this I couldn't finish all the parameters in my mathematics I did till I was satisfied to complete this research it has Dvectors Chaotic numbers (ɲ) it's postulate Cplane the distribution the operations on these numbers the maturity of this mathematics will take many many years but it does the work for now. I request to work more on my approach many of the things I didn't mention but can be achieved think about the applications of cryptography in this if we can control randomness many problems which can be solved. The control of Quantum Particles once we know it's next position, The weather predictions and so many more applications.

We started by showing how today's number system is so fragile and why we need a new number system and we saw how it helped us solve problems we were just waiting for years someone would solve and I have started this new number system which has potential to do much more this is just my ideas and approach. I was only able to apply them with the questions I found on google like millennium prize problems as they are so famous I live in a very small town in India where not many people are even literate. I found my knowledge through youtube and online lectures and I was able to try these problems there might be a different problem that would become easy with this. This paper has a lot to take in and many new things to digest but if this work were to ever go public it will be a new opportunity for researchers to use this tool shape it the way they like, I would encourage researchers to work on this number system and make it robust enough as it's just a proposed method from my small mind what more could I have done and what the world might do with this new mathematical tool which is so different in nature. For more information on chaotic numbers refer [22]

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