Anti - Information and Ghost Fields

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Abstract

Abstract: There has been an enormous amount of literature in the field of physics today. The articles are often very esoteric and sometimes interminable. An amateur or even a graduate may have an extremely difficult time analysing and comprehending the range of articles published. The author is no exception to this. I have a background in psychology and some experience in mathematics. I hope to do further study in physics. I have been philosophising on the nature of reality and the following paper are my conclusions. Remarkably, what was a totally unrelated idea on the logical structure of our reality may have the consequence of unifying general relativity with Quantum Mechanics. The author has seen much, closely related material in the literature regarding the structure of spacetime and is sure that amongst the forest of ideas this tree has already been felled. Thus I humbly put forward my analysis of reality and hope that the article will be entertaining.

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1 Ghost Fields

A basic outline of the nature of reality - Ghost fields and Anti - Information John Peel Jpeel01@hotmail.com B.A(psych). Grad cert(Math)

2 Introduction

Introduction: At the current time there is a vast arsenal of literature regarding the authors aims here. It is extremely difficult with limited time,

resources and capability to survey the entire body of literature, hence the author here, tries to propose, what are some hopefully novel ideas and to those to whom these are their areas of expertise I apologise for my naivete. I wish this article to be simple and accessible to undergraduates and laymen, without much of the jargon and pretence that can ruin a beginners enthusiasm. This article is dedicated to geometry and logic and the nature of reality. The author has a major in psychology and philosophy with some mathematics but is considering further study in physics. Not only can the following model be useful in understanding reality, it may be a way of unifying General relativity and Quantum Mechanics. The essential idea here is that behind the multiverse there is an Information Superspace which contains the required structure to express itself in a universe.

In this reality it my belief that logic is expressed by the Cartesian Axes. These axes fill space - time in what is best described as a crystal structure. They are, most likely, Planck length in numeration. Thus space itself is a logical construct, where if there is no energy coincident on the structures - called fields, then they are simply the Cartesian axes fitted together. Please not this produces Octahedrons which can completely fill space. Why they should, in a deeper sense, be Cartesian Axes appears mathematically intractable. They appear to be an antennae to a larger space which is common to the Multiverse. It is the logical position in this space that determines how a universe behaves.

This Information Superspace (Called I) is a topological construct which will express itself in different regions and the universe in question 'decides' which elements will be expressed. The essential idea here is that logic is expressed in quanta of the Cartesian Axes. These are Planck Length in numeration.

Thus the structure of these Axes, neatly packed together to form a 'crystal' like structure of space – time. This implies a grid – like pattern to the universe and when matter/energy is coincident on these fields they contract, which means they express the notion of Space -time cuvature seen in Einsteins General Relativity.

The Axes are not 'real' in a sense they are simply structures of logic – hence the name 'Ghost Fields'. This grid like structure has been studied before but the author believes it requires closer re-examination.

At the boundaries of these Ghost Fields exist entities called 'Rays'. These are essentially the strings in String Theory. As well as small energetic strings there are large free floating strings which follow the $E = 1/x$ law of energy and Length. In the same way the fields contract as $E = 1/x^n$. Thus energy

imposed on top of the fields implies that the energy itself takes the form of the axes. This is manifest as waves on the arms of the axes - these are called branches. As will be seen later, in a mathematical way, it is the shape of these branches that determine forces etc.
Please note a casual search of the internet will produce, for example, the following "Information may be defined as any type of pattern that influences the function or manifestation of other patterns". As you will see this is very apt.
Central to this idea is the notion that a particle (A condensed grouping of information – seen later) has an 'awareness' according to $xp < h$. Notice the inversion of the inequality sign. This will be justified later by modifying the Schwartz inequality. That is the uncertainty of awareness of a grouping of information is less than what would otherwise be allowed if it were not aware. Thus groupings of information are aware of each other and perhaps this can produce consciousness. This will be demonstrated mathematically later. This implies they 'know' if they are close to or interacting with other particles. That is they know the input, output, state and relative nature of neighbouring particles, with respect to the fields. That may be the the inherent difficulty of examining small momenta and displacements. That is the fields are 'fooling' us and are 'aware' of other particles and interactions.
From the authors limited knowledge of high level physics it appears these structures of information/ logic are a selection, amongst many of Quantum Gravity and String Theory. Duly noted is much of the material both credible and amateurish which has appeared in writing. I do not mean this article to be revolutionary, rather a reflection of the authors reflections on the nature of reality. I hope this article is both simple and interesting. Something which seems to be lacking in the hurry to prove superiority.
DAVID DIAGRAM 1 (AXES)

2.1 The information Superspace:

It is believed by the author that amongst the multiverse our reality lies. There should almost certainly be relations between each universe which can be understood. Central to this idea is the fact that set theory, which has much use in topology etc, will withstand the test of time. It appears that whenever there are objects (logical or physical) there will be a set to place them in. Furthering this there should be a way of selecting elements from this set of objects. In set theory this is known as a 'choice function'. It

may be a matrix, a set or even a string of binary values. I give this the symbol $\beta(t)$. If this information superspace $\vec{I}$ exists it must be both elusive and ubiquitous. Thus we can describe the physical universe by $\vec{P}$ and the Information Superspace by $\vec{I}$ Again - heuristically we denote our physical reality by $\vec{P}$ and we have:
$\vec{I} = \vec{I}^{-1}$
$\vec{I} = \vec{P}^{-1}$
$\vec{I} = \vec{P}$ This implies that $\vec{I}$ is it's own inverse, which may be a mathematical oddity but appears useful to recreate the appearance and disappearance of I. It exists and is ephemeral at the same time.
The equation $\vec{I} = \vec{P}^{-}1$ means that if something is large in reality it is small in $\vec{I}$ and vice versa. The equation is not absolute in the sense that a tiny thing such as a Planck Length Field (axes) will be large but rather a heuristic as to how this functions. Further to see that much information can be stored in a small region of I we have
DAVID DIAGRAM 2 (MATRICES) A = [a] a = b b
(David to insert)
Which implies a nested, perhaps infinite compression of information. Topologically the metric on the topological space (X,T) is such that the expression of X depends on $d(x, y) = 1/r$ Where r is the radius of information of $\vec{I}$ and d(x,y) is the logical expression. To act on $\vec{I}$ to produce a motivation for existence we have the lagrangian:
$E–U = L$
Which can be written as
$[E_{i+1} - \beta_i(t)]$
Which is an operator such that
$[E_{i+1} - \beta_i(t)]I = f(\epsilon)$
Where $Ei + 1$ = dynamic $\beta_i(t)$ = static
Here E_{i+1} is a selection operator such that $E^{-}1x$ removes one multiple of x (any variable) and $E^{+}1x$ replaces one multiple. Here we can represent many interactions in the universe by this equation and we can also differentiate and integrate by removing or replacing a variable. $\beta(t)$ is the choice function discussed above. The $i + 1$ and i subscripts indicate that there is a time progression such that the generalised Lagrangian operates on a sequence (anything) $\vec{I}$.
Here in this and related realities we denote $\vec{P}$ by $\{m^i x^j f^k\}$ where m = mass, x = length and f = frequency = 1/time. As should be obvious these can de-

note momentum $m^1x^1f^1$ and angular momentum $m^1x^2f^1$ and energy $m^1x^2f^2$ we can extend this up to many higher orders of values that may be necessary in other universes.
The difference $E_{i+1} - \beta(t)$ can be written as $x_1 - x_2 = f(\epsilon)$ which if $f(\epsilon) = 0$ implies a complete attraction , that is $x_1 = x_2$ and a non – zero value of $f(\epsilon)$ implies degrees of attraction and repulsion. Thus $vecI$ is held together or spread out as required. It is a simple matter of basic topology that if there are two sets X and Y (which can be extended to any number) then we have a metric and functions to study them. Further to enhance our study of $\vec{I} = \vec{P}^-1$, and $\vec{I} = \vec{I}^-1$ we have $[E_{i+1} - \beta_i(t)]I = 1/[E_{i+1} - \beta_i(t)]P$ It is the authors belief, after much consideration that most universes have one or a selection of. Energy, Length, Time, Sequences(n), Information, Anti – information(To be discussed).
Thus we have
DAVID DIAGRAM 3 (VENN) Where we can take arbitrary unions and intersections to make a universe. For example$E \cup t \cup x$ could be our own reality of mass, length and time. We can also – due to the fact that there are 6 of the above elements – set these upon the cartesian Axes as follows:
DAVID DIAGRAM 4 (AXES AGAIN)

(Axes and labels Plus X and b(t)X) Where this may be a relation to our own universe. Please note the $\beta(t)$ and X on the diagram.

2.2 The structure of the Ghost Fields and the Grid.

Here it is believed that space - time is made up out of logical constructs that have the structure of the Cartesian axes. Energy upon these structures causes the arms of the axes (called branches) to contract and distort, meaning sinusoidal like waves. Also when mass/ energy is incident there is a structure at the origin of the fields called a centre. It is most likely spherical and expands in size when matter coincides. The more mass incident the larger the centre, until a black hole is formed where the centres expand sufficiently to encompass the branches. This is the same amount of mass determined by the Planck length Schwartzchild radius.
The centres do not appear in free space as there is no mass/ energy and information is allowed to travel unimpeded. The state of zero energy of the fields is called unmotivated. This is allowed as will be shown later because of the inversion of the uncertainty principle. They are simply no more than

a logical structure. The growth of a centre with energy may be linked to the Higgs field.
Thus energy shrinks the branches and grows the centres. The branches contract as $E = 1/x^n$ such that they reflect Einstein's notion of space-time curvature. To illustrate that it is actually also time that is contracted - and to express the notion that time is also a part of the fields we have the following.
We need the relativistic equation for proper time in one dimension.
$(d\tau)^2 = dt^2 - dx^2$
such that $dt^2 = (d\tau)^2 + dx^2$
This is the equation of a circle .
Thus we can write ; $dt = d\tau cos(\theta)$
and $dx = d\tau sin(\theta)$.
These imply sinusoidal waves of time on a branch. Perhaps - tentatively, time 'flows' throughout the fields, in all directions, and is ubiquitous. Thus time exists on the branches and when a Field contracts time slows down (that is with mass).
The fields may contain the Nihilum (nothing) that is space-time is set on nothing or it may be a form of logic or even time itself filling the axes. Thus both energy and time are waves on the branches of the fields. The hypothesis that the axes are in close alignment means that if they rotate they will send out miniscule waves. A related concept here is acceleration. If space - time really is inert why the energy concerns with rotation? It appears that the fields provide a way of 'knowing' that a particle is turning from it's trajectory. This said - in order to satisfy certain requirements the fields are also able to rotate - though they will send out a small wave.
Obviously the fields packed together will form a crystal like structure to space - time and also logic but this could also be described as a grid (as opposed to a lattice - which has an esoteric meaning in mathematics) If we consider the two dimensional case where we have two orthogonal directions $x = i$ and $y = j$ then if we have a sequence of many fields we can write the curvature of space as $(\delta j/\delta i)_{j=1}^{n}$.
Further we have the slope of a trajectory as $dj/di = \tan(\theta)$
Also the metric $X^\mu X^\nu$ can be written as $\sum i^2 + \sum j^2 + \sum k^2$ where k is the third dimension of space.
The centres communicate with the neighbouring fields. The pertinent notion here is that within a small radius the centres (associated particles) are aware. Thus they control the behaviour of other fields, dependent mainly on

the internal workings of the centres. This may be a phase angle, a logical association or even a probability or all of the above. The centres and Fields being aware of other fields within the radius $\Delta x \Delta p < h$ is justified by the following; a hypothesised phenomenom called Awareness.
To begin we have the operator $\vec{A}$ which when it appears in the equation for the uncertainty regarding the operator $\vec{A}$
$(\sigma_A)^2 =< (\vec{A} - < A > \phi | (\vec{A} - < A > | \phi >$
Here we need an expression which is less than this to invert the uncertainty equation. This implies that - under assumption that at the centre of a particle is an entity which is aware of the input, output and state of neighbouring particles. This awareness is less than h (Plancks constant). This means particles can 'fool' an observer and provides motivation for the inability to study small momenta and radii. Each particle is incident upon a (many) field(s) (the cartesian structure). Essentially all the following equations mean is that, due to awareness of the Fields the uncertainty of this awreness in the fields is less than the uncertainty for usual Quantum Mechanical observations.That is $\sigma_Q \leq \sigma_A$ and $\sigma_P \leq \sigma_B$ Where σ_A and σ_B are the usual uncertainties. Thus we can write;
$(\sigma_Q)^2 \equiv < (Q - < Q >)^2 >$
$=< \phi | (\vec{Q} - q)^2 \phi >$
$=< (\vec{Q} - q)\phi | (\vec{Q} - q)\phi > \leq min(\sigma_A)^2$ and also;
$(\sigma_p)^2 =< (\vec{P} - p)\phi | (\vec{P} - p)\phi > \leq min(\sigma_B)^2$
Thus for any radius $\delta x \delta p \leq h$ the inequality can be inverted. This is in accordance with the particles being aware.
Regarding this, as already stated there exists a mathematical space $\vec{I}$ which is essentially the logic behind any given universe. It is the topological region in which the universe in question is located that determines the behaviour of that universe. $\vec{I}$ is similar in nature to phase space. Here however trajectories can be undetermined and behave in ways that are contrary to the usual phase space. Thus $\vec{I}$ can be chaotic which implies that uncertainty is actually located in $\vec{I}$. The physical universe, when studied classically is deterministic. The close relationship between the behaviour of the fields and the equations of Quantum mechanics implies that, perhaps it is the feedback between the logical, chaotic space $\vec{I}$ and the energy/mass incident upon the fields that makes for only probabilistic studies being possible. Inherent in this is that particles (and the fields they occupy) are aware of the nature of other fields. This relates to the uncertainty principle such that particles

(ie the fields) are subject to $\delta x \delta p \leq h$ (remember this is an approximation to the reduced Planck constant). In the language of quantum mechanics we have - for the uncertainty σ_A and σ_B;
$(\sigma_A)^2(\sigma_B)^2 =< f|f >< g|g >\geq | < f|g > |^2$
Now for any complex number z
$|z|^2 = |Re(z)|^2 + |Im(z)|^2 \geq |Im(z)|^2$
This is equal to $[1/2i(z - z*)]^2$ then we let:
$z =< f|g >$ to obtain $(1/2i[< f|g > - < g|f >])^2$ But here the dynamics of the Ghost Fields is such that the uncertainty lies in $\vec{I}$. That is it is $\vec{I}$ that 'fools' us into not being able to measure small momenta and radii (and hence energy and time). Therefore the real part of the uncertainty vanishes (for awareness). Thus we have; $z = x + iy$ and $z* = x - iy$
$Im|z|^2 = [1/2i(y - -y)]^2$ and;
$[1/2i(2y)]^2 \leq [1/2i(z - z*)]^2 \leq (\sigma_A)^2(\sigma_B)^2$ Thus again we can invert the uncertainty principle. Please note after much work we obtain the familiar operation notation for the uncertainty principle:
$[1/2i(2y)]^2 \leq (1/2i < [\vec{A}, \vec{B} >])^2$
This working is daring and may very well, on closer analysis prove faulty but we can attempt something even more controversial - that is to say that the logical space $\vec{I}$ is actually determining what is written on this page. Here we can delve into the relation between the physical universe (ie what is written on this page) and the logical space $\vec{I}$. That is $\vec{I}$ can manifest itself as an abstraction - hence the symbols written here. The following is an attempt to demonstrate the hold that the logical space has on the physical universe. That is that there is feedback between it and the physical universe such that $\vec{I}$ is both logical and chaotic and that if it were not for this the physical universe $\vec{P}$ would be deterministic. Remember it is the Cartesian Fields which express the underlying $\vec{I}$. To show this via the uncertainty principle we have;
$p = h/\lambda$ or;
$\alpha p = h/(\omega\lambda)$ Where α and ω are constants either of which can be plus or minus 1. This inverts the sign of $xp < h$. Here on the cartesian fields, planck length in numeration, which constitute space - time and which distort when mass/ energy is incident upon them, are insensitive to the direction of motion of a particle, within the radius h. That is we can take either a positive or negative direction within h and it affects the equation. By continuation of awareness within this radius and the influence of $\vec{I}$ both ω and α continually oscillate from one direction in the fields to the other. The group velocity of

momentum remains unchanged. Because either direction $+or-v$ is equally likely we can choose α, ω to be + or - 1. Thus;
$-p\omega\lambda < -h/\alpha$ Here however we want the magnitude of momentum;
$|p\lambda| < |h|$ The reasoning behind this is that this equation is a reflection of the logical nature of the Fields and $\vec{I}$. This logic is built up to the macroscopic scale. Regarding this we have the choice function $\beta(t)$ which can select any desired value in an equation or set/matrix. Thus we can write;
$\beta_1(t)mdx/dt\beta_2(t)x > h/\beta_3(t)$ Thus it is a simple matter for $\beta(t)$ to choose both a negative and/or positive value (that is + or - α or ω because $\beta(t)$ can be set to change value as time progresses. Therefore we have;
$|\beta_1(t)\delta x\delta p| < |h|$ and;
$|\beta_2(t)\delta x\delta p| > |h|$ Therefore awareness is only available for a brief instant (probably Planck time for an individual Field) between the next oscillation. This frequency would be particularly useful. This awareness can continue - through the logical constructions of $\vec{I}$ and physical reality $\vec{P}$, where the longer principle of communication holds, to this page and the information presented.
In the same manner as the problem of anti - matter and matter imbalance we need to find why awareness (that is the ability to select states relative to input, output, state and behaviour of neighbouring fields NB selection is the key word here - it is believed by the author that even consciousness is simply a selection of states) is restricted to less than h. that is;
$|\beta(t)\delta x\delta p| < |h|$. Also the rationale for being able to circumvent the usual rules of inverting the inequality when multiplying by a negative number is the indeterminate nature of $\vec{I}$ and the awareness with h.

For the information processed in the centres they will change geometry as information is processed thus for
$|x - x_0| < \delta$ we have $|f(x) - f(x_0)| < \epsilon$
The moniker for the general grouping of ideas in this framework is Anti - Information theory. This and string theory are not mutually exclusive and in fact strings are necessary in Anti - Information theory. Strings are essentially what is 'real' about the universe. This theory should place constraints on string theory which might be useful in narrowing the solutions. Strings (the same thing as 'Rays' - which are the boundaries of the fields) can be related to the Centres by the following:
$g(n, \theta) = h(n)e^{in\theta}$ such that the centres are the interface between $\vec{I}$ and re-

ality. Thus strings are the real component of the above Euler identity where $e^{i\theta} = cos(\theta) + isin(\theta)$ Such that they are sinusoidal in nature. The $h(n)$ term reflects the radius of a centre and is to be linked to the Higgs Potential such that mass is related to the radius of a centre. (This is currently beyond the author if even possible).
When the branches (the arms of the Cartesian axes) oscillate they do so with a frequency f this is related to information processing frequencies in the centres by $\omega = 2\pi f$
Regarding information itself - although the fields when unmotivated are static, inert and rigid - they are still a form of information. That is if we define, heuristically information as I we have $I = dx$ where for the axes themselves there are 6 bits of information plus the boundaries. Thus information is a displacement and logic (as defined by $\beta(t)x$) is a choice between these displacements.
The Cosmological Problem can be easily circumvented by saying that empty space is exactly that - empty. That is the unmotivated Fields do not oscillate. They are static. They are static because they are unaware. That is $\delta x \delta p < h$ only applies when energy is incident upon a field. That is, it is impossible to communicate with $\vec{I}$ without motion.

We now introduce an idea that seems to have been overlooked in Nuclear Physics. It is essentially a set that describes a set of points along a shape. If we have a point in three dimensions then we need three pieces of information to describe it. Thus we have a radii and two associated angles. If we take many sequences of many points we have a set that describes a curve/shape. Mathematically this may be one of the most important points of this paper. Thus to begin we have.
$\vec{X} = [r_i, \theta_i, \phi_i]$ This is illustrated in the following diagram. Here however to describe fully the nature of reality we need more - that is - the dimension we are working in, the frequency of activity and the position in the grid that is the Fields. Thus we have:
$\vec{X} = [r_i, \theta_i, \phi_i, X^\mu, f_i, A_{ijk..}]$
We can describe mass/energy on these fields by the following:
$F = ma$ and $F = kx$ thus $m = F/a$ and $a = xf^2$ Thus we can write:
$m = kX_1/X_2 f^2$ This means that within the above set we have a means of including the three fundamental Dimensions of mass, length and time.

$\vec{X}$ can be very useful in many areas from molecular dynamics to abstract fields such as topology. After speaking to experts it was found that $\vec{X}$ is difficult to define for functions etc but could be of great use practically.
Following this we have the item:
$x_1 - x_2 = f(\epsilon)$ This can be used to describe attraction and repulsion of various objects. That is it depends on $f(\epsilon)$ if this is equal to 0 then the objects coincide and $x_1 = x_2$. Thus the magnitude of $f(\epsilon)$ determines how close two things are. Now if we replace x by $\vec{X}$ we have :
$\vec{X}_1 - \vec{X}_2 = f(\epsilon)$ for two shapes (ie the above set $\vec{X}$ and we also have $x_1 - x_2 = f(\epsilon)$ which in structure suggests that shape is related to attraction and repulsion of particles. Please note the similarity in form of the two equations
Furthering our study of shape we can arrange periodic (and even non-periodic) shapes along an axis or 'line of intersection'. There may be many of these lines and if we employ:
$v = xf$ then we have $x = v/f$ which means the points of displacement which we measure depend on the frequency of the oscillation regarding the shape. This period of travel between points on the shapes can be varied as can the velocity at which the shapes are being examined . remember $f = 1/T$.
Thus different velocities will produce different shapes.
If we now sum the frequencies of various Fields this can be related to the frequency of larger scale motion. Thus it is possible that the centres and branches control the dynamics of the universe using frequency and geometry. Here shape itself is the language of the multi-verse and frequency is it's execution. Topologically a line is homeomorphic to a circle and an octahedron (the shape made by the Axes) is homeomorphic to a sphere. if we want to calculate a value for a displacement it can be done using the above $x = v/f$ or we can simply take scalar multiples of the dimensions of a certain shape. The sums of energies of the fields equates to the sums of energies of larger objects. The energy of angular momentum of the branches is $\frac{\partial L}{\partial t}$. The energy of a string and the energy of a field are the same entity.

2.3 AntiInformation

If we take the heuristic:
Anti Information = Information - Logic.
we can take logic as "making the right choice". That is it is closely related

to the choice function $\beta(t)$ thus we have:
$\vec{A} = X - \beta(t)X$ where X is the piece of information related to displacement. If we then take the density of AntiInformation along a length X' we can produce a result that is close to a definition for entropy that is:
$S = (X - \beta(t)X)/X'$ that is AntiInformation is Entropy times displacement.
N.B if we let $X = X'$ the the rate of change with respect to X is $= 0$ and also $S = 1 - \beta(t)$ This however is trivial as essentially whatever values you give for X then $\beta(t)$ is usually around 1. essentially a truism that logic $= 1$.
Here is $X \leq X'$ then we can also use S as a probability that is $(\Phi)^2 = (X - \beta(t)X)/X'$‘
If we take another heuristic that is:
Information = Physical reality + logic. We have Physical reality = Information - Logic. Exactly the equation for AntiInformation.
In information theory there is a concept called a "string metric" this is essentially the logical distance between two sets of data. This should be particularly useful in Anti - Information Theory. For the sets $\vec{X}$ we have:
$\exists \vec{X} : f(X) = G(s)$ such that a shape $G(s)$ can always be made from $\vec{X}$.
Particle dynamics may be controlled by the centres. Thus for a circle with radius r and corresponding angle θ we have a large scale constant k which transforms small displacements into large ones thus $x = rcos(\theta)$ for the centres and also $y = rsin(\theta)$ such that for large scatterings we have $rcos(\theta) = k(r^2 - y^2)^1/2$ etc. Thus scattering may be a process resulting from the centres.
To illustrate an aid to understanding the Fields existence consider a probability function such that $P = dxdy/A$ thus the probability of finding information in an area is given. Now for two vectors describing dx and dy the Probability is maximum when the vectors lie on the two orthogonal arms of the area A. Thus a maximum probability is found when the information lies on the arms of the axes. That is to find the maximum area $dxdy$ this occurs when dx and dy lie along the branches this produces a probability of 1 and may also indicate that probabilities of fields may change when the angle between two branches changes.
Again for particle dynamics we can transfer the information about a particle (ie it's wave function) around the fields. That is a particle can be observed when it's wave function collapses. Now if we have certain coordinates for a particles existence on different fields r_i and we have the coordinate where the particle is most likely at R we can modify the centre of mass formula from

gravity to express it as :
$\sum I_i(r_i - R) = 0$ Where I_i is a variable of information. Here it is believed by the author that when interacting - the Information of a particle which is spread out across the Fields (and hence $\vec{I}$) collapses to a string.
Regarding entanglement it seems plausible, and here obvious, that the communication occurs through $\vec{I}$. This circumvents the usual velocity limit as $\vec{P} = \vec{P}^{-}1$ and thus $x = x^{-}1$ therefore the larger the trip in the physical universe the shorter the trip in $\vec{I}$.
For Pure states where the entropy is zero we have $(X - \beta(t)X)/X' = 0$ thus $\beta(t) = I$ the identity and everything is known. For product states we have a non zero entropy thus $\beta(t) < I$. That is less is known such that $\beta(t)$ is around 0.
Although awareness is a concept related to a radii around a particle given by $xp < h$ there can still be communication between fields that are far off. This occurs through $\vec{I}$ This is called communication as opposed to awareness.

2.4 Branches

The branches of the Fields are as important as Centres. It is Believed they contract as $E = 1/x^n$ when energy is incident upon them. For a wave which should model them quite nicely we have $E = kA^2$ Thus a large amplitude produces a larger energy. This suits as there is only 'so much' length to a branch. Thus the transverse direction has $y = (E/k)^1/2$
According to [1] all waves need:
1) A medium through which to propagate.
2) A disturbance such as an energy.
3) A mechanism as to how the disturbance propagates.
The Fields supply this criteria quite nicely. It is believed there are also large scale - free floating strings which communicate with $\vec{I}$. This is tied to consciousness and will be discussed in later papers. They behave as $E = 1/x$.
The Fields themselves are massless and inert. they are simply constructions of logic hence the name "Ghost Fields". Remember because the fields in free space are not aware and thus are not active - they fall under xp ¡h such that it is awareness that causes activity.
The branches have shapes of their own and can affect the large scale dynamics of particles in a similar way to centres. Here the relationship is given by and amplitude $f(x)$ where this amplitude is:
$f(x) = (1/(2\pi\sigma^2)^1/2)e^{-}((x - \mu)^2/(2\sigma^2))$ this should be immediately recog-

nised as the Bell Curve or standard normal distribution. If we allow both positive and negative values for $f(x)$ we can produce a sinusoidal shaped wave on the branches. (that is we can subtract a constant from the RHS and truncate). The implications of this should be obvious and the branches are a result of the statistical processes of neighbouring fields. If we let $f(x)$ equal the probability of a process then taking the logarithm of this and dividing the right hand side by probability gives an entropy $p_i ln p_i$
In order to use the Schrodinger equation on the branches we need a way of scaling the equations down. This could possibly be achieved by multiplying the reduced Plancks constant $\hbar$ by Boltzmanns constant . Thus $\eta = k_B \hbar$ which evaluates to around $1.45 - 10^{-}57$. The Boltzmann's constant k_B has units of energy and reciprical temperature thus is essentially dimensionless. This should allow at least a closer estimate of the behaviour of the fields. This will be discussed later.

2.5 The Grid and Logos Principle

If we are considering a grid like structure to the universe we should calculate things in terms of this grid. Thus for the x coordinates of space we have :
$x = \rho(i_k, i)$ where ρ is the metric and also $y = \rho(j_k, j)$ and similarly for z. Thus for successive displacements we calculate the distance of the $i'th$ element.
Regarding Einstein's work it can be debated as to whether there should be a background or not. The following equations attempt to put some of Einstein's work into the framework of Anti - Information.
For general relativity we have $E = 1/x^{mu}$
For special Relativity $x - \beta(t)x = (x' - \beta(t)x')/\gamma$ Where $\beta(t)$ selects values with respect to time,distance etc (ie using different equations and different $\beta(t)'s$) and this involves $\vec{I}$.
For $E = mc^2$ we have $H = E + \frac{\partial L}{\partial t}$ where L is angular momentum. Here E can be $E = mc^2$ but defeats the purpose.
It is believed by the author that time is simply 'frames' progressing in a certain order, as in an old time movie. This requires energy to progress and thus energy and time are closely related. Please remember this notion of "frames" progressing and this relation that energy produces time for later
The basic dimensions of mass length and time can then be broken down to the ordering and change or geometry of the fields.

The logos principle states that the Multi - Verse exists to express the logic and language of mathematics. The language here is geometry and frequency is it's rhythm.
The strings in string theory have a winding number and it is fortuitous that the fields provide a 'something' to wind around.
To experimentally verify that the fields exist, although no definitive proof either way, the permittivity of free space around a gravitational charge could be studied. Here the fields become more dense and should cause a change in the permittivity with respect to electric fields. Fields however may exist in $\vec{I}$ and thus not be affected by the change in density.

2.6 Some calculations and thoughts

Lets analyse the constant η. The author couldnt locate it in the literature again it is $\eta = k_B\hbar$ Where k_B is Boltzmanns constant. Now remarkably what is the simplest problem for the Schrodinger equation - the particle in a box - this suits the fields quite well. The behaviour of the branches can be modelled by the Schrodinger equation.
$-\hbar/2m\frac{\partial^2\phi}{\partial^2 x} = E\phi$
Such that $k = \sqrt{(}2mE)/\hbar$
And the solution is $\phi_n(x) = asin(n\pi/ax)$
And the energy becomes $E = n^2\pi^2\hbar^2/2ma^2$
Now in these equations we replace $\hbar$ by η which is the new constant of angular momentum for the branches.
For the mass - energy of an electron we have $E = mc^2$ and using the mass of an electron we have $E_1 = mc^2 = 8.199$ e -14
now $E_2 = n^2\pi^2\eta^2/2ma^2$
And $E_2 = 4.35$ e-14
Which is in remarkable agreement.
Further from string theory we have equations such as for the angular momentum of strings with a winding number n and a radius r:
$p = n\hbar/r$ Again we replace $\hbar$ by η to test. Remember the mass - energy of and elctron is 8.199e-14.
$P = n\eta/r$
we also have $E = pc$ substituting for E and finding p we have
p = 2.73 e -22
Now rearranging for r and solving we have $r = 5.3e - 36m$ which is nearly

exactly half the Planck length which is the supposed radius of a field. (The diameter of a field is about PLanck Length).
To further test η we have the relationship between energy and wavelength: $E = hc/\lambda$ Replacing h by η and using the Planck Length size of a field we have $E = 2.69e - 14$ Again in excellent agreement with the mass - energy of an electron. This is a tentative figure and it is a postulate of the fields that the greater the energy incident on them the further they contract but these have been a good way of testing η. The use of η and the Schrodinger equation may open up new possibilities for the study of what may be a sub - quantum world.
Going back to the notion that time can be a wave - here we relate time to the probability amplitude of a wave function. For those not versed in quantum mechanics please just read along as I am not too sure of the following myself. The following is a clever argument that time has a relationship to the wave function.
For a wave function ϕ, the proabability is determined by $|\phi^2|$. Thus for a simple sinusoidal wave function we have
$P = \int_o^a A^2 \sin^2(n\pi a/x)dx$.
The trick now is to write $P = ct/b$ SUch that the probability is the speed of light c times a time interval t (Planck time) divided by length b (Planck length). This should equal 1. Thus we have after completing the above integral $P = 2/a[x/2 - 1/(2n\pi/a)\sin(n\pi x/a)\cos(n\pi x/a)] = ct/b$ evaluated from 0 to a.
This becomes $1 - 1/2m\pi a^2(n/piO/h)(n\pi A/h) = ct/b$ Where O and A are relevant sides of the associated triangle for sin and cos. Allowing O to approach 0 means that we have $1 - 0 = ct/b = 1$
This also implies that if the wave function = 0, ie unmotivated, static, linear fields then time is also = 0. (N.B it may have been inevitable that the term $sin(n\pi x/a)$ would go to zero anyway for multiples of π.

2.7 The Information Superspace, Reductionism, Geometry and Frequency

Remember the symbol for the Information Superspace $\vec{I}$ and physical reality $\vec{P}$. There is a dynamic feedback between $\vec{I}$ and $\vec{P}$. Also recall the choice function $\beta(t)$ which selects elements.

We wrote Anti Information as $Information - Logic$ i.e $X - \beta(t)X$. Let us now consider how the universe came about. We assume that the initial radius of the universe was 0. We can write a clever equation as $\infty - \beta(t)\infty = 0$. Thus we have the potential for an eventually infinite universe written as $= 0$. NOw for the LHS to equal 0 we must have that $\beta(t) = I$ (the identity or 1). Now $\beta(t)$ is a reflection of knowledge thus for a universe beginning as radius 0 we must have complete knowledge. This does not necessarily imply a God only that the equation means things were in close contact. Due to the universes small size at $\infty - \beta(t)\infty = 0$, the awareness principle holds perfectly. Now when entropy increases such that $\beta(t) - > 0$ then we have $\vec{A} = x - \beta(t)x = \infty - \beta(t)\infty = \infty$ and the universe occupies the maximum in $\vec{I}$. There will be complete disorder and little awareness
Now if we use $\beta(t)$ in the awareness principle we have:
$(x - \beta(t)x)(p - \beta(t)p) < h$:
Expanding we have $xp - 2\beta(t)xp + \beta(t)^2xp < h$ If we let $\beta(t) = 0$ we have $xp < h$ the original equation. Thus logic has little role in awareness - it is a separate phenomena. Also if we let $\beta(t) = I$ we have:
$xp - 2xp + xp = 0$ Which is exactly 0. Thus awareness seems to be complete for a zero radius.
Here if we let x and p be the same form of information ie.
$x = p = I$ we have:
$(I - \beta(t)I(I - \beta(t)I) = /hbardx$ If $\beta(t) = 0$ we have:
$I^2 < l_{planck}dx$ Thus the equation:
$I = \sqrt{l}dx$ where dx is a variable in physical reality. If we let $\beta(t) = I$ then the LHS = 0, again implying a radius. ie $0 < l$.
Here because AntiInformation = Info - logic = I - L and Physical Reality = I - L or $x - \beta(t)x = \vec{P}$. and because of the duality between x and $1/x$ in string theory we have:
$I = \sqrt{l}\vec{P}^-1$. If we analogise this to large scales we have a suitable heuristic. Also, for angular momentum and duality, we have. $K = mx^2f/(x - \beta(t)x)$ and $K = (x - \beta(t)x)/mx^2f$:
If $\beta(t) = I$, $K = \infty$ and $K = 0$ then if $\beta(t) = 0$:
$K = mxf$ and $K = 1/mxf$. Thus momentums and displacements can be included in the march against reductionism. We will discuss Duality further later.
It may be possible to create portals through the universe with the fields. Essentially we must separate the fields from each other - hopefully entering

the "Nihilum" (nothing). Here we have:
$(x = v/f)_{k=1}^{n}$ Where x = displacement, v = velocity and f = frequency. This is so that $/sumx = \sum(v/f)$ SO that a displacement can be created. We can also contact $\vec{I}$ through the centres, thus perhaps reaching other universes. This could also apply to particle dynamics such that momentum is initialised or changed.
Regarding how to do this, obviously there must be a force to initiate motion. Using $x_1 - x_2 = f(\epsilon)$ we have: $mxf^2 = Lx_1 - Lx_2$ Such that L has dimensions of mt^-2. If we construe m/t as a flux of mass then m/t^2 is the acceleration of the mass. ie m/t is the amount of mass flowing in time t.
Regarding particle dynamics we have: $v = xf$ ie $v = x/t$. If we apply the formula in two related scenarios we have the sub - quantum changes in shape of the strings and fields in question. Thus for any particle:
$v = xf$ or $f = v/x$. This is called the "driving frequency". It is what causes change in a particular motion. If we sum these we obtain:
$v_{group} = \sum(xf)$.
The driving frequency of one and other particles is closely related. Here if the connected driving frequency is 0 the particle remains in motion. If the particles are within $\delta x \delta p < h$ particles can change each other so much so they can take each other's roles and become other particles. We can experimentally study this by looking at the behaviour of Fermions at exactly: $\delta x \delta p = h$.
If it is possible to separate the fields it may be that we have entered the Nihilum. Because time is related to energy there may not be any time in the nihilum ie $t = 0$ Now using the trusted and simple formula $v = x/t$ we write $t = 0$ thus $v = \infty$ also $x = vt = 0$ thus $x = 0$ and we have the remarkable result that is time is not present, travel is instantaneous. It is however more likely that we enter $\vec{I}$. AntiInformation theory is more about information than it is particle dynamics and space - time. In respect to binary logic please consider the following. $mxf.0.0.0.0.... = 0$ and:
$mxf.1.1.1.1.... = mxf$;
Thus multiplying an equation by an extended sequence of 0's or 1's gives a true or false representation of that equation. Thus 0 and 1 have more than a simple, binary, abstract meaning - they may literally mean true or false. Thsi implies multiplication of an equation by many 1's never changes the equation and multiplication by many 0's means the equation is equal to 0. But if we write the equation as: $x_i - \beta(t)x_i = A$ then we have $(1 - \beta(t))$. Thus if we let $/beta(t) = 0 or 1$ we can manipulate the equation such that we

have:
$\beta(t) = (1)_{k=1}^{\infty}$
$\beta(t) = (0)_{k=1}^{\infty}$
Thus any equation multiplied by $\beta(t) = 0$ will be the original equation and if $/beta(t) - I$ the entire equation will be 0. Here $x - \beta(t)x$ however is Anti-Information, the very opposite of logic. Thus binary values of 0 and 1 may actually have a mathematical basis rather than being arbitrary. It should be apparent that a pattern emerges as to how many times we can multiply by 0 or 1. It may be possible to ascertain the mathematical pattern of $\beta(t)$ to find patterns in equations wrt to reality.
Here regardin information and the fields it is also proposed that within a Black Hole the Nihilum exists, as before, along with a singularity. To see that it is possible for the fields to separate into a Black Hole of radius R_S we study the Schwartzchild metric and use the fact that $v = r/\tau$ where $\tau = 0$. The Schwarthchild metric is $(1 - 2GM/rc^2)dt^2 - dr^2/(1 - 2GM/c^2r) - r^2d\omega^2 = 0$
We neglect the right hand term and have:
$(1 - 2GM/c^2r)dt^2 = dr^2/(1 - 2GM/c^2r)$ Then:
$dr = +- cdt(1 - 2GM/c^2r)//$ Now let $dr = R_s$ This is justified by saying that within the Nihilum even differential distances dont apply so we may as well say that $dr = R_s$ Then. $2GM/c^2 = +- cdt(1 - 2Gm/c^2r)$
$2GM/c^3dt = +- (1 - 2GM/c^2r)$
$2GM/c^2(1/dtc + 1/r) = 1$ Here we isolate the $1/dtc + 1/r$ term. From the above we can replace $c$by the light speed in the Nihilum, that is $v = \infty$ Thus we have:
$(1/dtc + 1/r) = c^2/2GM$ but the velocity is equal to infinity $dtc = \infty$ where $c = v = \infty$ thus $1/r = c^2/2GM$ and then $r = 2Gm/c^2 = R_s$ exactly the Schwartzchild radius! Thus moving at infinite speed in the Nihilum we have R_s. NB dimensionally this would always occur as :
$1/dtc = 1/vt = 1/r$ and:
Here the essential expression is that in the Nihilum instead of $dx = cdt$ we have $dx = vdt$ and also that infinitesimal distances are essentially the same as larger ones. Remember it is assumed that it is the driving ferquency in the fields that determines the speed of light c. Regarding this remember $v = \sum xf$ where v is the group velocity determined by the activity within each field. $v = xf = x/t$ Again there is a duality within the fields such that $x/t = x/f$ and if $t = f$ we have:
$x = xt^2 or x = xf^2$ now the expression xf^2 is simply the acceleration. Thus from a duality we have acceleration. Again remember that within a field,

mass, length and time are all equivalent - they are simply expressions of a geometry. This is closley linked to $\vec{I}$. To show this we can simply write: $F = kx, a = xf^2, F = ma$ so we have $m = kx/xf^2$ Which is mass in terms of frequency and displacement. Here recall that time exists a waves on the fields as well as being a transcendental phenomena. The notion of time being waves on the fields means that time is experienced differently for different particles. This may have consequences in the study of consciousness.
Furthering this analysis of dualities and the nature of reality. If we have a curve $g(x)$ and another curve $f(x)$ we can find the AntiInformation of these curves by:
$g(x) - \beta(t)f(x) = \vec{A}$ or:
$f(x) - \beta(t)f(x) = \vec{A}$
Then by our definition of entropy a AntiInformation/length we have:
$S = (f(x) - /beta(t)f(x))/g(x)$
From first principles regarding derivatives we have;
$(f(x+h) - f(x))/h = dy/dx$ From continuity we can write:
$(x - \beta(t)x)/f'(x) = (f(x+h) - f(x))/f'(x)$ such that a small change in x produces a small change in y (f(x)). Further we can write entropy as:
$(f(x) - \beta(t)f(x))/h = S = dy/dx$ NB we really should be taking the absolute values of these as entropy is always greater than or equal to 0.Again
$(g(x) - \beta(t)f(x))/h = ds$ Now for dualities we need:
$dy/dx = dx/dy$ ie $1/ds = ds$ thus we have $(f(x+h) - f(x))/h = (x - \beta(t)x)/y$
Here the entropies can be equivalent. We can write this as:
$(f(x) - \beta_1(t)f(x))/h = (x - \beta_2(t)x)/y$ thus all we need for duality is $f'(x) = f'(y)$ such that $\beta_1(t), \beta_2(t)$ can be chosen suitably. Here the dualities depend on $\beta(t)$ Thus it is logic which determines Dualities. In general $\beta_1(t)$ does not depend on $\beta_2(t)$. There seems to be a potential in the logic. Remember $dy/dx = \tan(\theta)$ this is evident in the centres where the value of a variable such as angle in the centres determines the behaviour of the particles. ie:
$g(n) = h(n)e^{in\theta}$ This is indeterministic. Using this we use again $xp < h$ thus we can write;
$p = h/\lambda = h/x$ If we use the same h as above we can write (reversing the denominator) $p = h/dx$ or $p = dy/dx$ Thus remembering that like energy, momentum is simply "frames" progressing, we can write:
$p_i = f_i'(x)$ NB the connection to the quantum mechanics operator:
$p = -i\hbar\frac{\partial}{\partial x}$ SO we can write:
$P_i = if_i'(x)$ where $i \in \vec{I}$.

Using the same duality we can write.—— $(y - /beta_1(t)y)/(t - /beta_2(t)) = (t - /beta_3(t))/(y - /beta_4(t))$ (t = time). So that: $y/t = t/x$ or if y = x $x^2 = t^2$. and for a photon, after moving to each side. $t^2 - x^2 = 0$ Which is the equation for proper time in one length dimension. Thus we have derived an equation regarding relativity from dualities. Of course we need suitable $/beta(t)'s$. It would also be wise to write the equations with absolute values. $\vec{I}$ it seems is independent of $\vec{P}$ and perhaps fields such as electromagnetic etc exist in $\vec{I}$ thus lowering the vacuum energy where fields are supposed to always exist. To test in the affirmative for the existence of fields but not ruling out their existence due to fields being present in $\vec{I}$ we can examine the permittivity of free space near a gravitational charge. Thus we write $\Phi_E = E.dA$ such that the flux through an area dA is reduced near the charge.
Again with respect to dualities let's posit a tree structure where the tree branches out as we increase the distance r, from it's origin. The number of branches per unit length increases as we increase r. We have the linear density:
$\rho = N/r$ and we have a density for the area:
$\rho = N/r^2$. Using the latter equation we can write:
$r\rho = N/r$ If we set ρ and N to be constant for each r we have :
$r = 1/r$ Again a form of duality. Heuristiccally we can say:
$\rho = N/r.r$ but as we increases r ρ decreases but we have already stated there are more branches per unit length when r increases up the tree thus there is an inconsistency. If we use the linear density :
$\rho = n/r$ and the volume density:
$\rho = n/r^3$ for a given n $\rho = n/r$ will always be greater than $\rho = n/r^3$ for r ¿1. Then we have:
$n/r > N/r^3$ or $nr^2 > N$ or:
$rn > N/r$ We can equate and say:
$r = 1/r$;
Further lets say we have concentric circles of a given radius. For periodic shells, for position $n\pi$ on the horizontal axis we are given peaks and troughs ranging from -1 to 1. We can translate this to points of intersection of the horizontal axis. Let's now consider two functions $\cos(n/pi)$ and $\cos(\pi/n)$ If we let $n- > \infty$ for these expressions:

$$\lim_{n\to\ infty} \cos(\pi/n) = 1$$

$$\lim_{n\to\ infty} \cos(n\pi) = [-1, 1]$$

which is an interval. Taking the absolute value however of the second equation implies more equality‘.Thus again we can write $n = 1/n$ The fact that the latter equation oscillates is a feature of the indeterminism of $\vec{I}$:
This is particularly useful in the standard normal analogy to the waves on the branches. We can write the variance as:
$\sigma^2 = 1/n \sum (x_i - x)^2$:
$\sigma^2 = n \sum (x_i - x)^2$ for $n = 1/n$ and:
$\sigma^2 = n \sum (1/x_i - 1/x)^2$ and $\sigma^2 = 1/n \sum (1/x_i - 1/x)^2$.
These produce better calculations in the standard normal analogy.
Lets study the structure of the fields for a moment. If we consider rates of change there is no more rapid rate of change than the vertical y axis of a cartesian plane. There is also no slower change than the horizontal x axis. Now dy/dx of the y axis is infinite but the slope dy/dx of the x axis was 0. But it was clear to see that apart from a rotation their slopes are equal - do we have some sort of duality with the branches of the fields. Say we let the trajectory of a particle in a square box be it's slope.
$dy/dx = \tan(\theta)$
Now using the above argument of dy/dx for x and y axes, why should a given trajectory have a different slope unless there is a background of the fields.(ie infinite for the y axis) when it seems arbitrary. This may be the cause of the nature of acceleration. Lets consider some arguments from probability. For n events in an N dimensional space, the probability P is given by:
$P = n/N$ and for a given time:
$P = n/t/N = nN/t$ But here $1/t$ = frequency. Thus
$P = nf$ But P is also the number of events in a given volume.
$P = n/x^n = n/(dx^\mu)^n$ For example $P = n/x^2$
Equating the two probabilities:
$P = nf, P = n/x^n$ we have:
$n/x^n = nf$ then $f = 1/x^n$ Thus we have frequency in terms of length.
Regarding duality within the centres consider that timer could be caught in a "loop". There could be a geodesic around the centres (Which are spheres) such that time can travel an infinite displacement (simply looping round the centre) whilst still having a finite radius. Here we have for energy:
$E = 1/x$ and $E = 1/t$:

Thus $1/t = 1/x$ such that $t = x$ (need appropriate constants). Therefore the radius of a centre is essentially constant giving a constant time where time can flow indefinitely. Regarding the physical manifestation of logic we have symbols which represent momentum and energy. $E = mx^2f^2$
$p = mxf$
These are a complete abstraction of logic as the quantities to which they refer, for a single object, are contained within that object. The symbols m,x,f do not themselves change nor do the properties of the object (unless time progresses). To produce the correct logic, when the object changes it's behaviour the values of the equations must change to suit.
But since both momentum and energy refer to the same object, the change in momentum is a change in energy and these two are related in a continuous way. Using the definition of continuity, and calling mv the dependent variables we have:
$f(mv) = mv^2$ Using the ϵ and δ definition of continuity we have:
$|mv - \beta_1(t)mv| < \delta$
and:
$|mv^2 - \beta_2(t)mv^2| < \epsilon$:
If we let $\epsilon = \delta$ then:
$mv^2 - \beta_2(t)mv^2 = mv - \beta_1(t)mv$ Dividing by mv
$v - \beta_2(t)v = 1 - \beta_1(t)$ then:
$v = (1 - \beta_1(t))/(1 - \beta_2(t))$ Such that velocity is dependent on logic ($\beta(t)$). Now remember we can define entropy as:
$(x - \beta(t)x)/x = 1 - \beta(t)$ Thus $v = ds_1/ds_2$ and we have velocity in terms of entropy. This logical expression of a phsyical quantity implies logic is crucial in the physical universe. Since the symbols present in equations are completely arbitrary, rather than searching for patterns in the shape of the symbols we look for the entropy of curves (in cartesian plane).
Lets now consider AntiInformation, energy and force. We can write the antiInformation of energy as :
$E - \beta(t)E = \vec{A}$ and the energy density as $E/4\pi r^3$ equating these and using $E/r = force$ we multiply both sides by r^2 and we obtain.:
$mx^2f^2r^2 - \beta(t)mx^2f^2r^2 = F$ Suitable $\beta(t)$ can be chosen for a given energy, perhaps as sequences. The equation:
$E - \beta(t)E = \vec{A}$ describes the attenuation of energy.
Consider again the set $\vec{X} = [r_i, \theta_i, \phi_i]$ It essentially encodes the shape of a particle. If we take one element of the set, say r_i and apply a generator to

this we obtain a sequence of values of length. ie:
$\vec{R}\vec{X} = [r_1, r_2, r_3, r_4...]$ For a given particle these should oscillate about a mean. We can construct a standard normal distribution from this such that: $\vec{R}\vec{X} -> f(x) = 1/\sqrt{2\pi\sigma^2}e^-(x-\mu)^2/2\sigma^2$ This is entirely coded into the amplitude of the branches as $A = f(x)$ Further for a particular behaviour we can write :
$\vec{R}/vecX = (f(x))_{k=1}^n$ This gives meaning to length.:
Regarding $\vec{X}$, with the advancement of computing power, the set $\vec{X}$ may be a useful way of studying large data sets, so that people dont get left behind. That is we can "see" patterns and train our minds using:
$\vec{R}\vec{X} = (f(x))_{k=1}^n$ to produce shapes and patterns that can be recognised.
A useful way of looking at ANtiInformation and entropy is to write:
$s = |x_{i+1} - \beta(t)x_{i+1}|/x_i$ Such that x_i in the denominator is the previous iteration. NB the absolute value, so that entropy is greater than 0.
Perhaps in the indeterminism of $\vec{I}$ there is no such thing as a seperate entity. All geometries and frequencies are blurred. In mathematics however there are distinct entities for example $1, x, 3, x^2$.
The blurring of objects (especially lengths) may produce a sort of awareness such that it is paradoxically possible to again make things separate. This individuation seems to occur in $\vec{P}$ Thus within $xp < h$ we have both a blurring and an awareness of objects. This is where the selection process can "see" itself - that is quasi - consciousness. It was stated earlier that consciousness is simply the selection of states, where the selection process can "select it's selections". The awareness of a particle stops at $< h$.
Finally to finish this section we consider the information super- space $\vec{I}$ again. Using the following equations we can see the analogy to $\vec{P}$;
For energy in $\vec{I}$ we have:
$E = 1/x^n$ and :
$E = 1/t$ Where x and t are such that $x, t \in \omega_i$ where ω_i are parameters that go into understanding $\vec{I}$ NB these two equations also apply to $\vec{P}$ Remember $\vec{P} \in \vec{I}$. Which is one universe among many.
Very lastly we will perform some calculations regarding the standard normal analogy. For a mean of 0 we have (after rearranging):
$f(x)\sqrt{2\pi\sigma^2} = e^-(x^2/2\sigma^2)$ we now use the uncertainty principle $\Delta x \Delta p > \hbar/2$ but here we replace $\hbar$ by $\eta = 1.45e - 57$. Thus we have: $f(x)\sqrt{2\pi\sigma^2} = e^-(\eta^2\sigma^2/p^2)$ here the variance $\sigma^2 = 1/n(1/x_i^2)$ NB the duality x= 1/x. For a single field (n = 1)with $x_i = l_{planck}$ Thus the variance is $\sigma^2 = 3.82e69$ we have

the momentum of a an electron $E = mc^2$ and then $p = E/c$ to be $2.73e-22$ Plugging these in we have $f(x)(1.58e35) = 0.89$ Thus $f(x) = 5.79e-36)$ which is approximately half a field of planck length. This is a satisfactory figure and vindicates the potential use of both η and the standard normal analogy with duality..Another formulae which is worth examining is replacing the x in the distribution such that $F = kx$ which is $x = F/k$ such that a force due to geometry can be found. This may be useful (with constants) to separate the fields and create a portal in either the Nihilum or $\vec{I}$.

3 Results and Discussion

4 Conclusion