



HAL
open science

On the Unification of Spinor Spaces with M-theory through a non-holomorphic Lorentz-Cauchy-Turing Complex Function Integral forming an Analytical Theory.

Joseph Spurway

► **To cite this version:**

Joseph Spurway. On the Unification of Spinor Spaces with M-theory through a non-holomorphic Lorentz-Cauchy-Turing Complex Function Integral forming an Analytical Theory.. 2024. hal-04608838

HAL Id: hal-04608838

<https://hal.science/hal-04608838v1>

Preprint submitted on 11 Jun 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

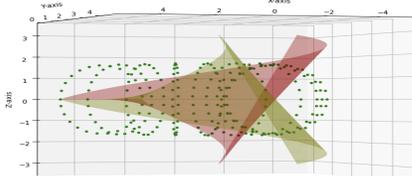
On the Unification of Spinor Spaces with M-theory through a non-holomorphic Lorentz-Cauchy-Turing Complex Function Integral forming an Analytical Theory.

Joseph

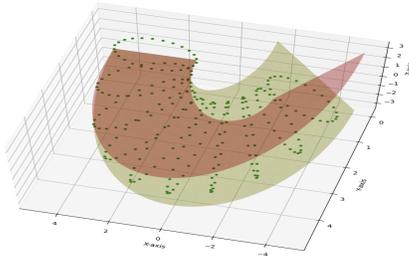
Abstract—This document outlines a Natural conjecture associated with our observations on Reality. This incorporates Information Constructor Theory to define a Energy based Numerical Geometric computation technique that relies on the concurrent computation in the Newtonian structure of the Observed Surreal—a physical Complex domain. This relation to an Invariant reality defined by Aristotle, Newton, Maxwell and Einstein’s prime points of knowledge are expanded upon to incorporate a unified logical Turing based Constructor system defined by observations of non-holomorphic string like manifolds at the root of all observation. It is shown that these logical manifold gates hold in low, observable Energy states, and it’s structure defining the electromagnetic fabric our Observed Real Reality is not only derived upon, but, is also intimately define by. A corpuscle of internal reference of any manifold onto any specific internal reference or external domain by rotation.

January 10, 2023

3D Plane 4D Torus with Temporal Loops



3D Plane 4D Torus with Temporal Loops



I. BACKGROUND

Assuming a definitions of Euler, the vector space \mathbb{C}^n , (where kets can be identified with column vectors, and bras with row vectors are a unitary Hilbert-Gelfand-Segal space observed by Classical mechanics) we can define a static domain about the observations point as the identity;

$$e^{ix} = \cos(x) + i\sin(x)$$

where i is a cyclic vector $\pi(x)\xi : x \in A$. This creates a C^* algebraic representation of a Observation Taylor Harmonic. A state on a C^* -algebra, A , is a positive linear functional f of norm 1 to the Real line. If A , say a string, has a multiplicative unit element then this condition is equivalent to $f(1) = 1$ or the string being observed. If A were to hold no element on the Harmonic stemming from the norm line we define the space as an inverse to the observed - a negative abstract space within the H domain of observation. The representation π of a C^* -algebra A on a Hilbert space H , an element ξ is called a cyclic vector if the set of vectors

$$\pi(x)\xi : x \in A \{ \pi(x)\xi : x \in A \}$$

is norm dense in H , in which case π is called a cyclic representation. Within this paper we will discuss how at the lowest levels of observations where this causal condition of normative causality has to break down, and thus forms a exponentially large domain of operation while maintaining validity between observed universes of discourse. This lost sense of causality connects each operational space as non-homogeneous sub-domain of connection internal to each operational change in time as a function of $\pi(x, y)$. The addition of this Complex Inverted Energy to our system of Observation is no new exploration and it accounts for both Dark Energy and Matter in our probe measurement. While this creates a an opportunity for super-positioned validity in argument within a individual operations interpretation of the geometric Riemann sum that is composites of with some interoperable discrete determination of Information defined by this Turing feature of causal Universal Interaction as a extension of each units rotational relativity in its efficacy of rotation within the Complex Domain.

II. THEOREM

The inverted linear operator $\pi(x)\xi : x \in A\{\pi(x)\xi : x \in A\}$ deteriorates its operable domain as x approaches infinity within a Riemann Zeta function that breaks the observation causality definition in $\frac{dy}{dx} = \frac{d}{dx}f(x)$ as a function of probing efficiency within the Schrodinger wave function.

III. METHOD

$$\begin{aligned} i &= \sqrt{-1} \\ H\Psi &= E\Psi \\ \zeta(t) &= e^{-\frac{iEt}{\hbar}} \\ \Psi(x, t) &= \Phi(x)\zeta(x) \end{aligned}$$

Where;

$$\begin{aligned} \zeta(0) : T(t) &\propto e^{-iEt/\hbar} = e^{-i\omega t} \\ \Phi(x)e^{e^{-i\omega t}} &= E\psi(x) = -\frac{\hbar}{2m} \frac{\partial^2}{\partial x^2} \psi(x) + \hat{v}\psi(x) \end{aligned}$$

from the classical definition of longitudinal probing that is dependent only on observation rotation and the function π ;

$$\begin{aligned} l_p &= t_p c \\ c &= \frac{\hat{l}_p}{t_p} \end{aligned}$$

that defines a observation probe in Hilbert space that is holistically upon this longitudinal complex plane as a function of photon observation. By applying this to the field equations the pi functions itself is canceled to create a valid singularity point of mathematical observation that is linear relation to all observers within the domain of probing. Each electron equating to a functional connection between the domains, that ultimately leads observation itself to being a differentiation of spacetime at the electron value we observe at 0. This sub-surface defines the meta-physical relation between objects and the causal structure they present.

$$l_p = \sqrt{\frac{\hbar G}{c^3}} = \frac{1}{\sqrt{2}} \frac{\lambda_l^2}{12\pi k_e^{18} A_l} g_\lambda^2$$

Where;

$$\hbar = \frac{h}{2\pi} = \frac{c^3 \left(\frac{1}{\sqrt{2}} \frac{\lambda_l^2}{12\pi K_e^{18} A_l} \right) g_\lambda^2}{G}$$

as; $\lambda_l = r_e \frac{1}{k_e^2} g_\lambda^{-1}$ and $A_l = a_c^{-1} \frac{3\pi\lambda_l}{4K_e^4}$ and $g_\lambda = r_e \frac{1}{k_\lambda}$, form from just the longitudinal plane alone.

$$\begin{aligned} \hbar &= \frac{c^3 \left(\frac{1}{\sqrt{2}} \frac{(\{r_e\} \frac{1}{k_e^2} g_\lambda^{-1})^2}{12\pi K_e^{18} a_c^{-1} \frac{3\pi \{r_e\} \frac{1}{k_e^2} g_\lambda^{-1}}{4K_e^4}} \right) (\{r_e\} \frac{1}{k_\lambda})^2}{G} \\ \hbar &= \frac{c^3 \left(\frac{1}{\sqrt{2}} \frac{(\{r_e\} \frac{1}{k_e^2} (\{r_e\} \frac{1}{k_\lambda})^{-1})^2}{12\pi K_e^{18} a_c^{-1} \frac{3\pi \{r_e\} \frac{1}{k_e^2} (\{r_e\} \frac{1}{k_\lambda})^{-1}}{4K_e^4}} \right) (\{r_e\} \frac{1}{k_\lambda})^2}{G} \end{aligned}$$

This large complexity can be organized when we set $r_e = \pi(x)$ and $a^{-1} = e(\omega)$. From this and the following observational

constants where $c = \frac{dy}{dx}$ and G to be $6.674 \times 10^{-11} Nm^2/kg^2$. Finally we take $k_e = 2^n$ as the logical a linear relation and take the g-factor to be a Universal Relation $g_\lambda = \frac{r_e}{a_c^{-1}} = \frac{\pi(x)}{e(\omega)}$. The substitution;

$$\hbar = \left(\frac{dy}{dx} \right)^3 \left(\frac{1}{\sqrt{2}} \frac{\pi(x) \frac{1}{k_e^2} \left(\frac{\pi(x)}{e(\omega)} \right)^{-1}}{12\pi(x) k_e^{18} e(\omega) \frac{3\pi(x)\pi(x) \frac{1}{k_e^2} \left(\frac{\pi(x)}{e(\omega)} \right)^{-1}}{4(k_e^4)}} \right) \left(\frac{\pi(x)}{e(\omega)} \right)^2$$

now asserting the normalized Domain with our values;

$$\hbar_0 = \left(\frac{1}{1} \right)^3 \left(\frac{1}{\sqrt{2}} \frac{\pi(x) \frac{1}{2^2} \left(\frac{e(\omega)}{\pi(x)} \right)}{12\pi(x) k_e^{18} e(\omega) \frac{3\pi(x)\pi(x) \frac{1}{k_e^2} \left(\frac{\pi(x)}{e(\omega)} \right)^{-1}}{4(k_e^4)}} \right) \left(\frac{\pi(x)}{e(\omega)} \right)^2$$

$$\hbar_0 = (1)^3 \left(\frac{1}{\sqrt{2}} \frac{\frac{1}{2^2} \left(\frac{e(\omega)}{\pi(x)} \right)}{12(2^{18}) e(\omega) \frac{3\pi^2(x) \frac{1}{2^2} \left(\frac{e(\omega)}{\pi(x)} \right)}{4(2^4)}} \right) \left(\frac{\pi(x) e(\omega)}{e(\omega) \pi(x)} \right)$$

$$\hbar_0 = (1) \left(\frac{1}{\sqrt{2}} \frac{\frac{1}{4} \left(\frac{e(\omega)}{\pi(x)} \right)}{3145728 e(\omega) \frac{3\pi^2(x) \frac{1}{4} \left(\frac{e(\omega)}{\pi(x)} \right)}{4(16)}} \right) \left(\frac{\pi(x) e(\omega)}{e(\omega) \pi(x)} \right)$$

$$\hbar_0 = \left(\frac{\sqrt{2} \left(4 \frac{e(\omega)}{\pi(x)} \right)}{3145728 e(\omega) \frac{3}{4} \pi^2(x) \left(\frac{e(\omega)}{\pi(x)} \right)} \right) \left(\frac{\pi(x) e(\omega)}{e(\omega) \pi(x)} \right)$$

$$\hbar_0 = \left(\frac{\sqrt{2} \left(4 \frac{e(\omega)}{\pi(x)} \right)}{3145728 e(\omega) \frac{3}{4} \pi^2(x) \left(\frac{e(\omega)}{\pi(x)} \right)} \right) \left(\frac{\pi(x) e(\omega)}{e(\omega) \pi(x)} \right)$$

$$\hbar_0 = \frac{4\sqrt{2}e^2(\omega)}{361864e^3(\omega)\pi^2(x)}$$

$$\hbar_0 = \frac{\sqrt{2}e^2(\omega)}{9216e^3(\omega)\pi^2(x)}$$

Where;

$$9216 = 2^{10} \times 3^2$$

and,

$$\sqrt{2} = \sqrt{-1} + \sqrt{-1} = i + i$$

When the π function is not aligned with the Information it is lost due to the entropy decay back to the Natural function. This logical infallibility is the straw held by Newtons third law and is the foundation of the Surreal Number system. Due to this logical causality of Reality we can define a meta-physical root of singular observation to this sub-domain of non-Real. This by definition is a Binary operation through all that is Mathematically Observable - as a function of the rotating unit sphere to form observable torus of Energy that defines the Discrete building blocks of the Nature we understand. The root structure between our observation of $\sqrt{2}$ and some non-rotational field $0e(\omega)$ we can define the No field as a base Surreal Number Structure that is derivable down to the binary junction 3 at which point it becomes non-holomorphic;

$$\omega(\sqrt{2} + 1) + 1$$

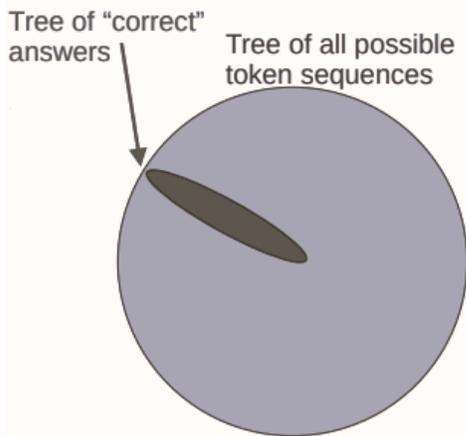
=

$$\{1+3/2+1/4+1/16+1/64+\dots|2-1/8-1/32-1/128-\dots\}$$

IV. P SPACE

Within Newtonian transportable sub-Pi frameworks this Lorentz-Cauchy-Turing space defines a space of operation as a space of operation that is calculable to be P(correct) on all sub spaces. That is to say the observation of the Hypothesis Conclusion Conjecture within the real is Observed as this sub P-space domain. We can abstract through this efficiency in the Complexity domain to define a holomorphic p-space that incorporates higher information capacity per unit at that predicted by Moore. We see this limit reached today through non-attentive Auto-Regressive Large Language Models that stay within this sub-space of correct Real output. The assumption for the divergence being explanation is that there is no underlining structure there to be observed - this is inaccurate as we see the following exponential relations dependency to what was just discussed.

$$P(\text{correct}) = (1 - e)^n$$

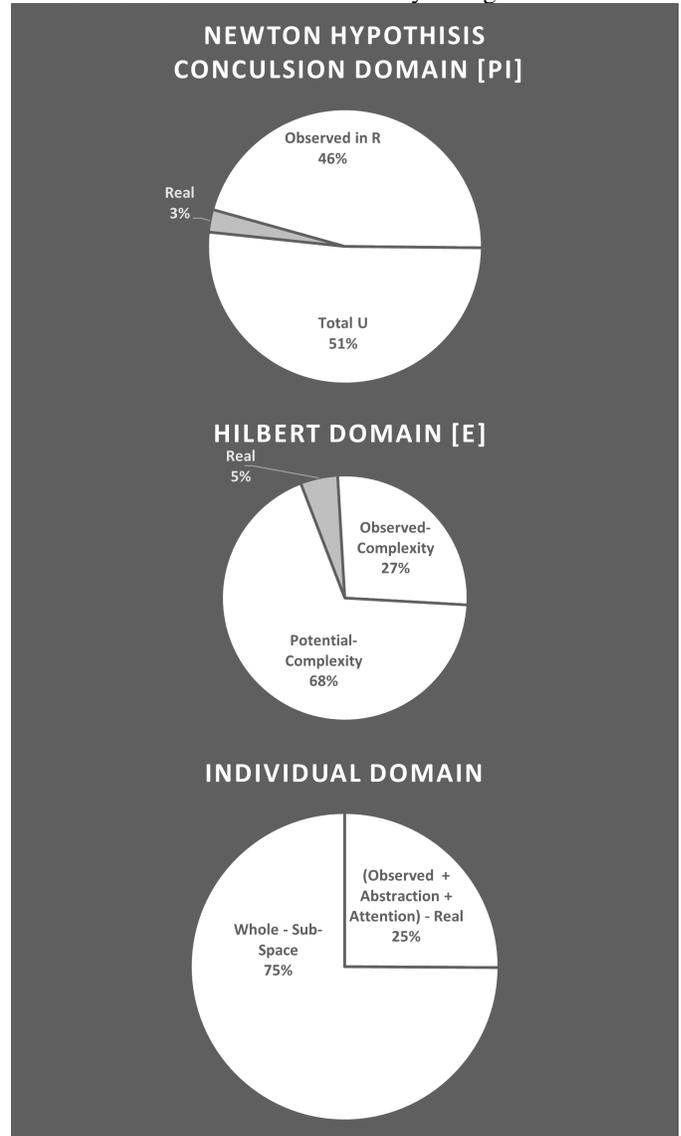


This P-space not only morphs to the background observational images we observed in 3-D but also to the Informational Energy the community has never be able to realize to. The relation to non-baryonic Dark Matter and Dark Energy of the Ether have been deduced to independently Universally inter-information Attention functions that define change within the full-P-space domain; the observed and unobserved complexity of life.

Real	Observed-Complexity
5%	26.80%
Potential-Complexity	Observable in U
68.20%	84.543%
Total U	95.00000000000000 %

In the standard lambda-CDM model of cosmology, the mass-energy content of the universe is defined above a being composite of 5% ordinary matter, 26.8% dark matter, and 68.2% a form of energy known as dark energy. Thus, dark matter - what is Observable within U - constitutes around 85% of the total mass that constitutes our observation, while the symmetric addition of this observed U and the Complexity that constitutes that observation are synonymous with dark energy and dark matter respectively by constituting 95% of the total mass-energy content. This final part makes up our abstraction of this relation as a ration of the informational change over time. This is treated as the operation ratio of Energy - we

can define any Mass as a function of subjectivity to efficacy in the probing construct. As such, if we affirm this to be a sufficient enough probe for construct we can geometrically infer these relation as the ratios themselves to each other and the logic that they provide to use on an individual level-each domain an abstraction above any change in information.



By combining these on meta-abstract level we can educe a stability that is in binary superposition in its operation across the two domains while allowing for equal complexity in each domains communication for a unit of time. Below shows the Summation super-position collapse of these units as a Unit Sphere at t = 0 where the fundamental relation of π is defined on each plane that forms a single projection above and below it space-time though some efficiency structure defined by the coefficient relation of \cos and \sin to there inverse within Complexity.

A Universally defined structural Information processing speed;

V. CONCEPTUAL INTEGRATION

The proposed non-holomorphic Lorentz-Cauchy-Turing complex function integral reconciles the differences between classical and quantum mechanics within M-theory by introducing a unified mathematical structure. This structure incorporates:

- **Invariant Reality:** Expanding upon classical principles to create a logical system accommodating non-holomorphic manifolds.
- **Causal Structure:** Addressing the breakdown of normative causality at quantum levels, defining large operational domains with sub-domain connections.
- **Non-Holomorphic Manifolds:** Utilizing these manifolds to link classical observables and quantum fluctuations coherently.

VI. MATHEMATICAL RIGOR

The C*-algebra representation has specific implications for the physical interpretation of quantum states:

- **Cyclic Vectors:** Ensuring that the algebra acts densely on the Hilbert space, approximating any state within the space.
- **State Representation:** Positive linear functional on the C*-algebra representing physical states, providing stability and reproducibility.
- **Observable Phenomena:** Supporting a wide range of phenomena by manipulating algebraic structures, enabling unification of classical and quantum domains.

VII. OBSERVABLE CONSEQUENCES

Empirical validation involves several approaches:

- **Astrophysical Observations:** Comparing theoretical predictions with cosmic microwave background radiation, galaxy rotation curves, and large-scale structures.
- **Particle Physics Experiments:** Searching for signatures of predicted particles or interactions at particle colliders.
- **Gravitational Lensing:** Observing gravitational lensing effects to understand the distribution and properties of dark matter.
- **Precision Measurements:** High-precision measurements of fundamental constants to test the consistency of the theory.
- **Cosmological Simulations:** Comparing simulations incorporating theoretical constructs with observational data.

VIII. CONCLUSION

The proposed theory integrates classical and quantum mechanics within M-theory, providing a unified framework that can be tested through various empirical approaches. This integration offers a pathway for understanding complex physical phenomena, including dark energy and dark matter, through a comprehensive and mathematically rigorous model.

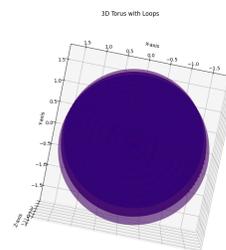
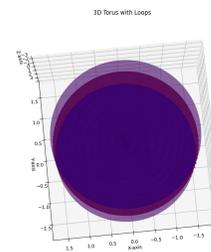
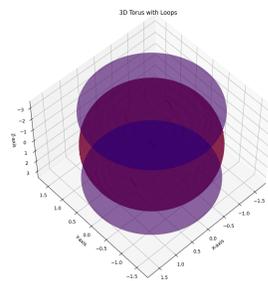
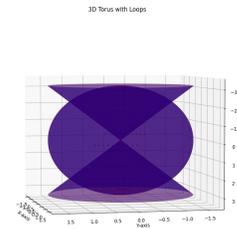


Fig. 1. Mathematical Constructor for a Observer Singularity.

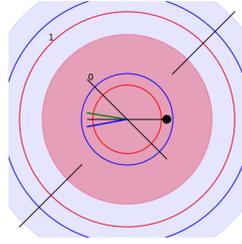


Fig. 2. Information Constructor for a un-observable Observer - 1

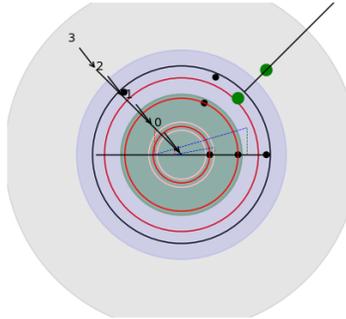


Fig. 3. Information Constructor for a Binary Observable Observer - 3

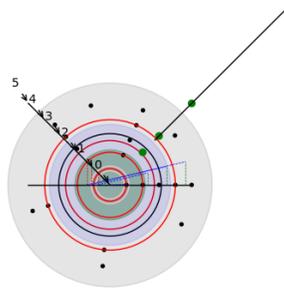


Fig. 4. Information Constructor for a Stable Observable Observer - 5

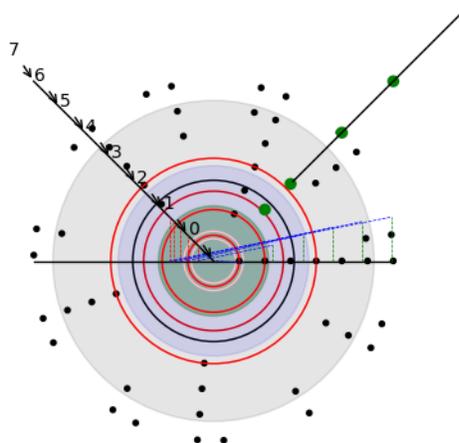


Fig. 5. Information Constructor for a Efficient Observable Observer - 7.