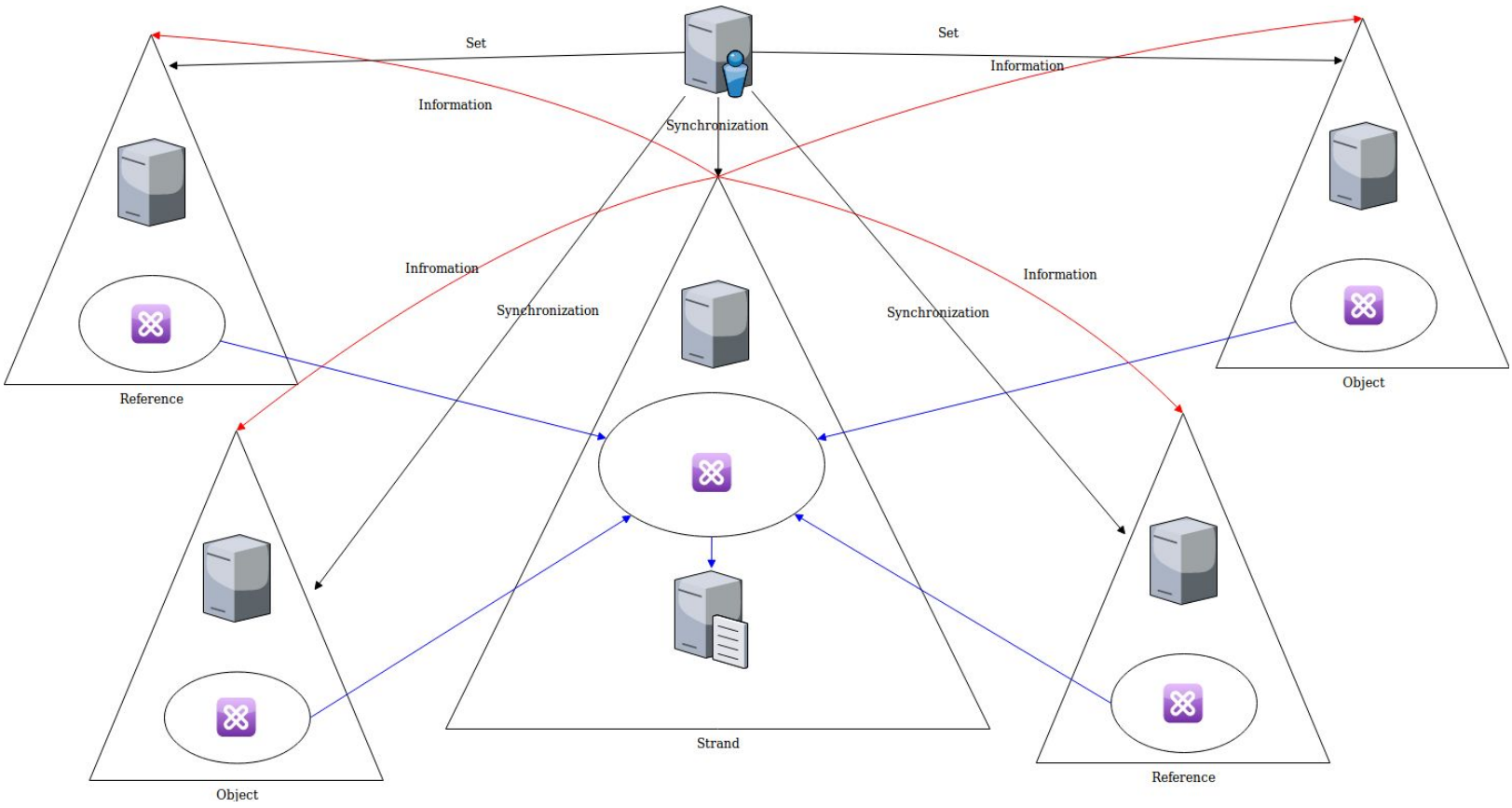
Algorithmic Quantization for the Analysis of Wave Propagation, our Universe and Cosmic Origin

Andrew M. Kamal



Abstract: This paper will utilize advanced computational mathematics and Quantum statistics for an algorithmic view on our universe. We will look at the theoretical nature of wave propagation, different Quantum states and propose a mathematical analysis for how it ties all together. Sequential equations applicable to nature and a utilization of Quantum similarity as proposed in my previous papers will also be used. The purpose of this paper is to provide a new approach to algorithmic Quantization in terms of describing the biggest complexities in Quantum Mechanics.

Keywords: Quantum Mechanics, Data Science, Algorithms, Quantum States, Nature, Theoretical Physics, Metaphysics, Mathematical Physics, Computer Science, Quantum Origin, Quantum Similarity, DNA Storage, Particle Physics, Classical Mechanics, Non-Relativistic Mechanics

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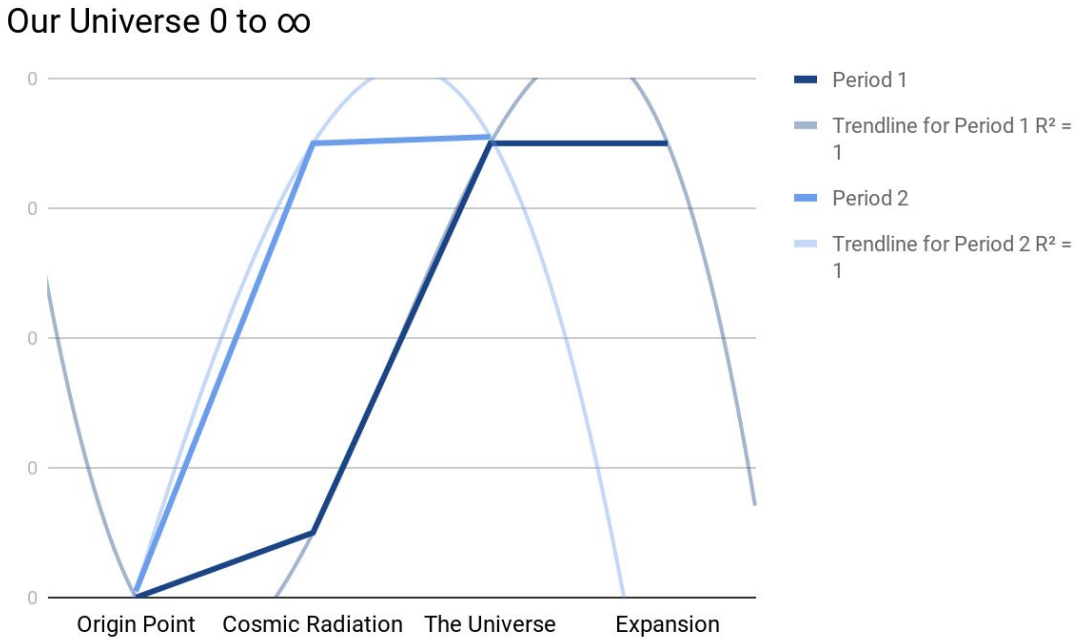

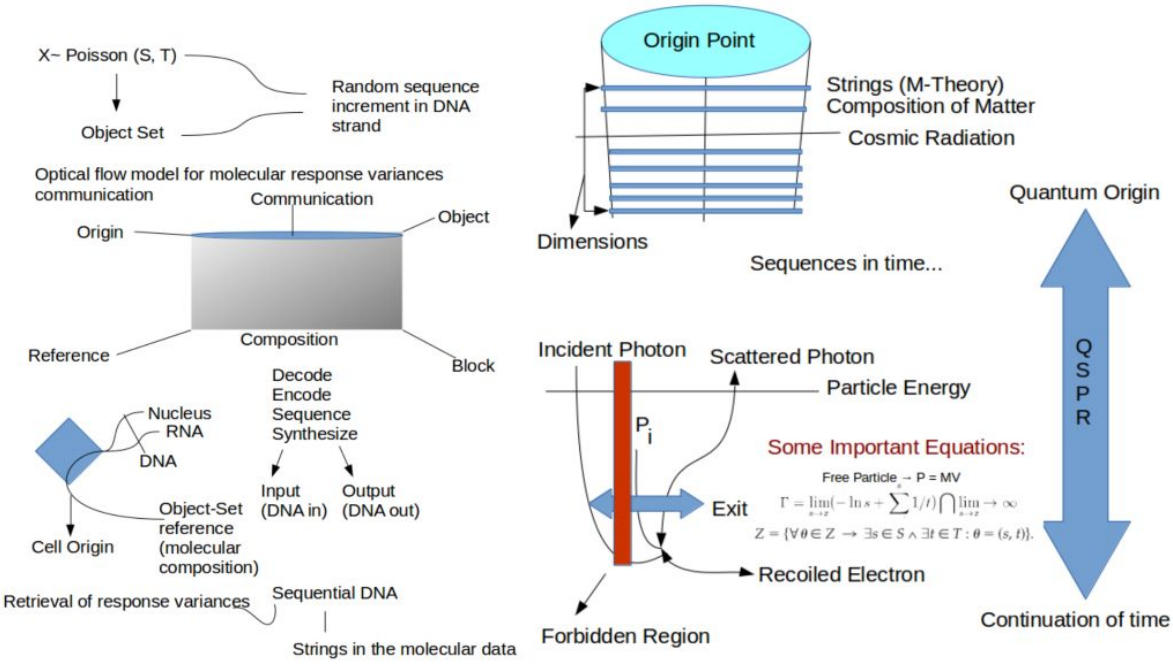

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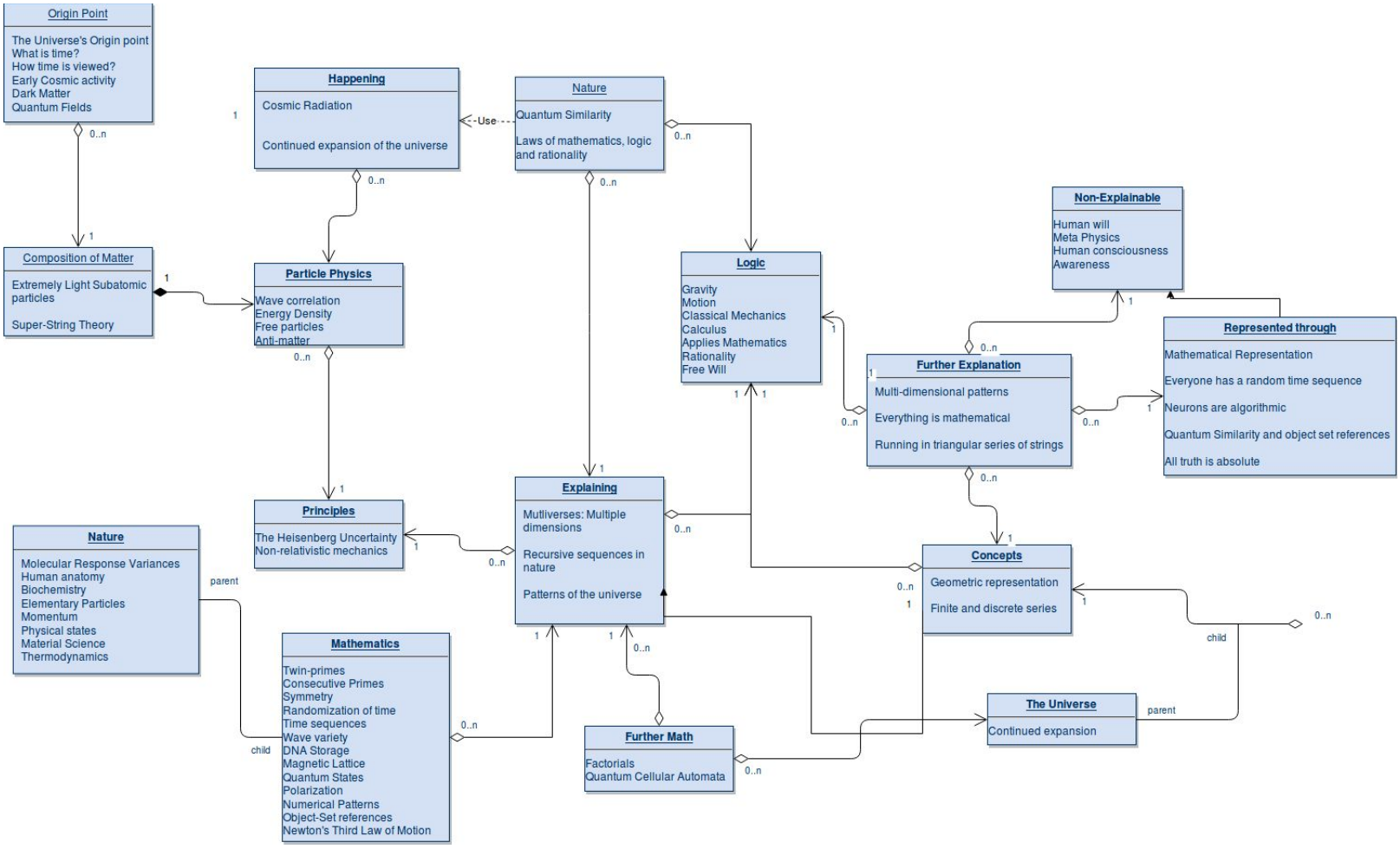
What is everything?



The best explanation of our universe is that we all know it has an origin point. As described in previous research, the beginning of time is when this hypothetical origin point started. This means that anything before the universe's origin point doesn't have to follow any of the laws of the universe or the principles that make the universe in harmony. There are likely two possibilities when looking at the universe. The universe is either entirely random or it is at harmony with these systematic patterns. In the structure of our universe, if it follows systematic patterns then this makes it easier to understand the very foundation of our universe and how it performs. Everything we look at including time itself will be explainable through simple mathematical variables and the complexities are already there for us to analyze. Our understanding of the universe is fairly limited, but it is quite obvious that the universe follows systematic and algorithmic patterns. Describing it in complex terms or even layman terms is but

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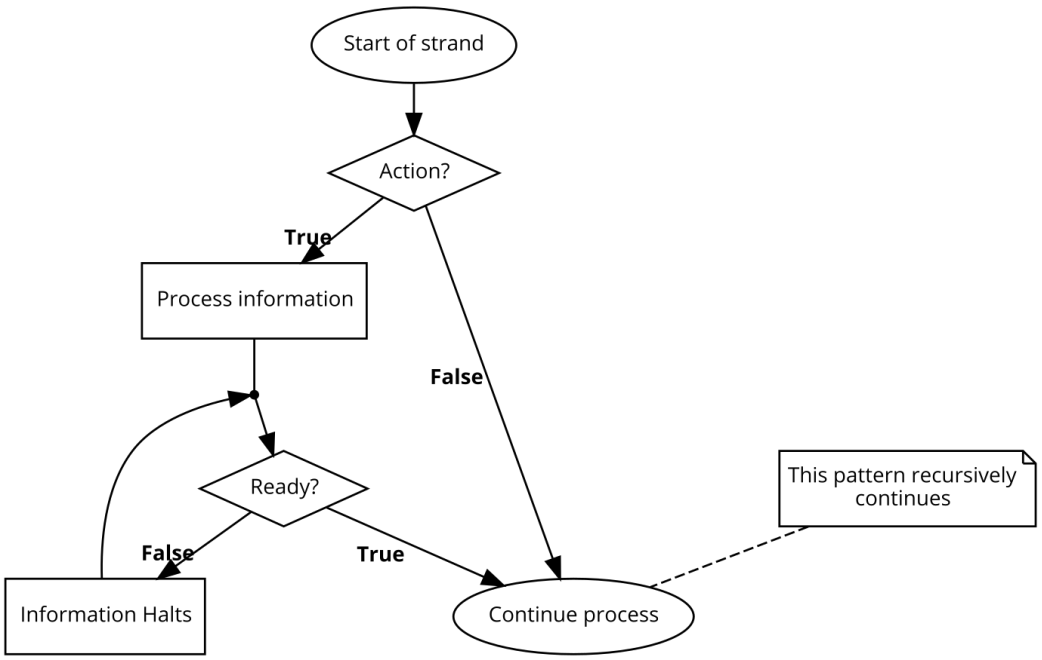
a struggle of modern day science. Once one accepts that the entire universe as we know it is mathematical, then we can begin having an overview of our universe. However, one most also expect that before time itself, we as scientist can not conclude that prior to the origin point, mathematical laws existed. If the universe is created out of nothing, one can conclude it started at the point of origin. However, explaining the mathematical harmony of the universe would be exceedingly difficult, and likely impossible. If some randomized event or design happened before the origin point, than we can systematically look at the mathematical laws that govern our universe afterwards. However, scientist most realize either way the physical nature that we are observing is applicable towards after the universe's origin point. Pure theory alone can't explain the less explainable if we are limited to the mathematics after the universe's origin point. We must look at the sequences of nature, patterns, and statistical variances of what is going on.

Object-Set References



The algorithmic process seen above is basic recursion. This happens all throughout nature and even in simplest forms in Quantum Similarity, boolean logic, etc. For every sequence that happens either the information halts or continues. For our biomolecular sequences, once a process halts, there is usually still a continuation of another sequence. The most complex forms of recursion is best described with what happens in between. For example, besides this, what replicates information? What is the communication happening between and what is the randomized sequential data being transmitted? In the hierarchy of things, it is dependent on

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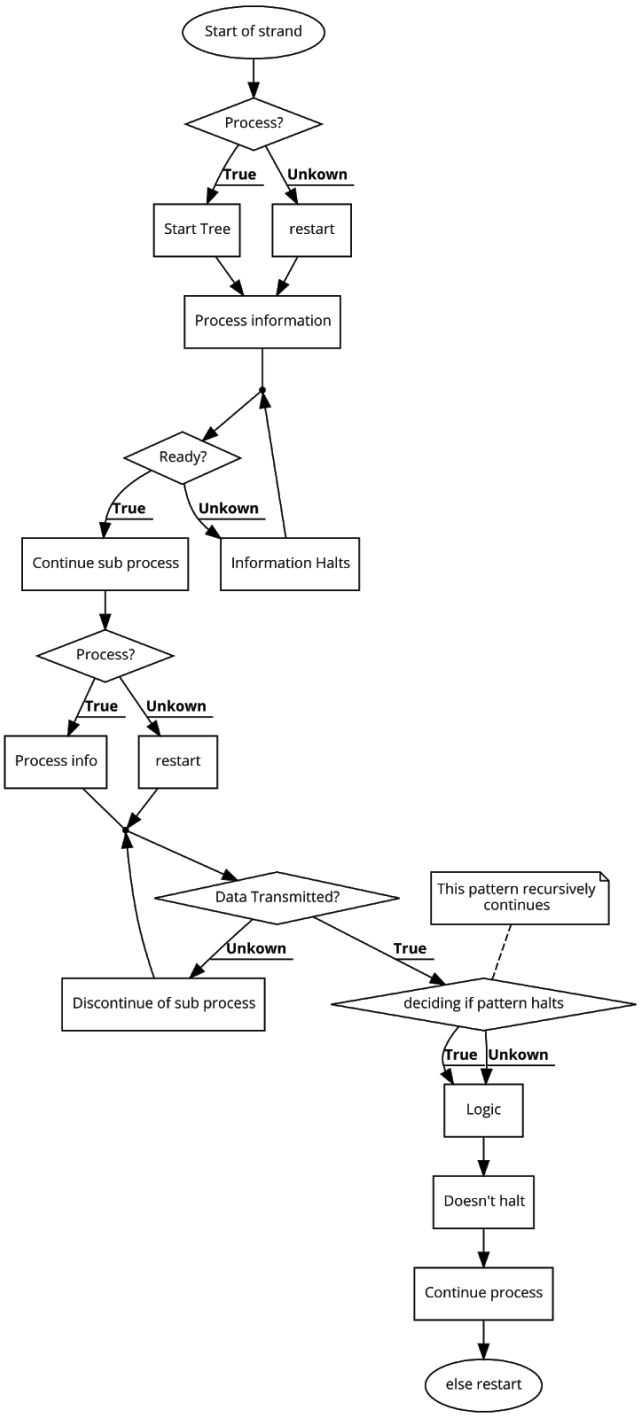
what is being analyzed. For DNA you have these replicators, and strand origin. For DNA, you have these sequential molecular response variances and what is described in QSPR. However, when looking at recursion for other set natural processes in the universe, the things happening in between utilize different data models with systematically similar mathematical patterns.



Continuing Recursion Sample

The example image to the right shows what happens to simplified recursive patterns when you add a bit of logic and hierarchical learning. The sample simple xml chart we seen earlier is now much more complex. This is why the sequential patterns in nature have their own uniqueness for complexities based on the data model being followed. Us as a species rely on harmonized mathematics for the continuation of our universe. This is simply how the laws of nature works. Not only is logic itself algorithmic but fundamental sub-processes that happened after our universe's origin point all follow a harmonized mathematical pattern. Even when information itself halts or an end event happens, a continued process of data transmission or logic happens afterwards. Time in essence is all mathematical recursion. As the universe expands, the mathematical complexity of the universe becomes more and more in depth. Even us as a species become more and more improbable in our own existence, and the statistical order of the universe is in itself a harmonized pattern. All of mathematics is discrete, and every sub-process of that happens given a certain event is a continued sequence of its own. Even random events or statistical outliers happen at recursion. Given the universe's expansion, these events are no longer considered random. Even if the universe halted, the very statistical nature already is a profound harmony given what is observable in fundamental nature.

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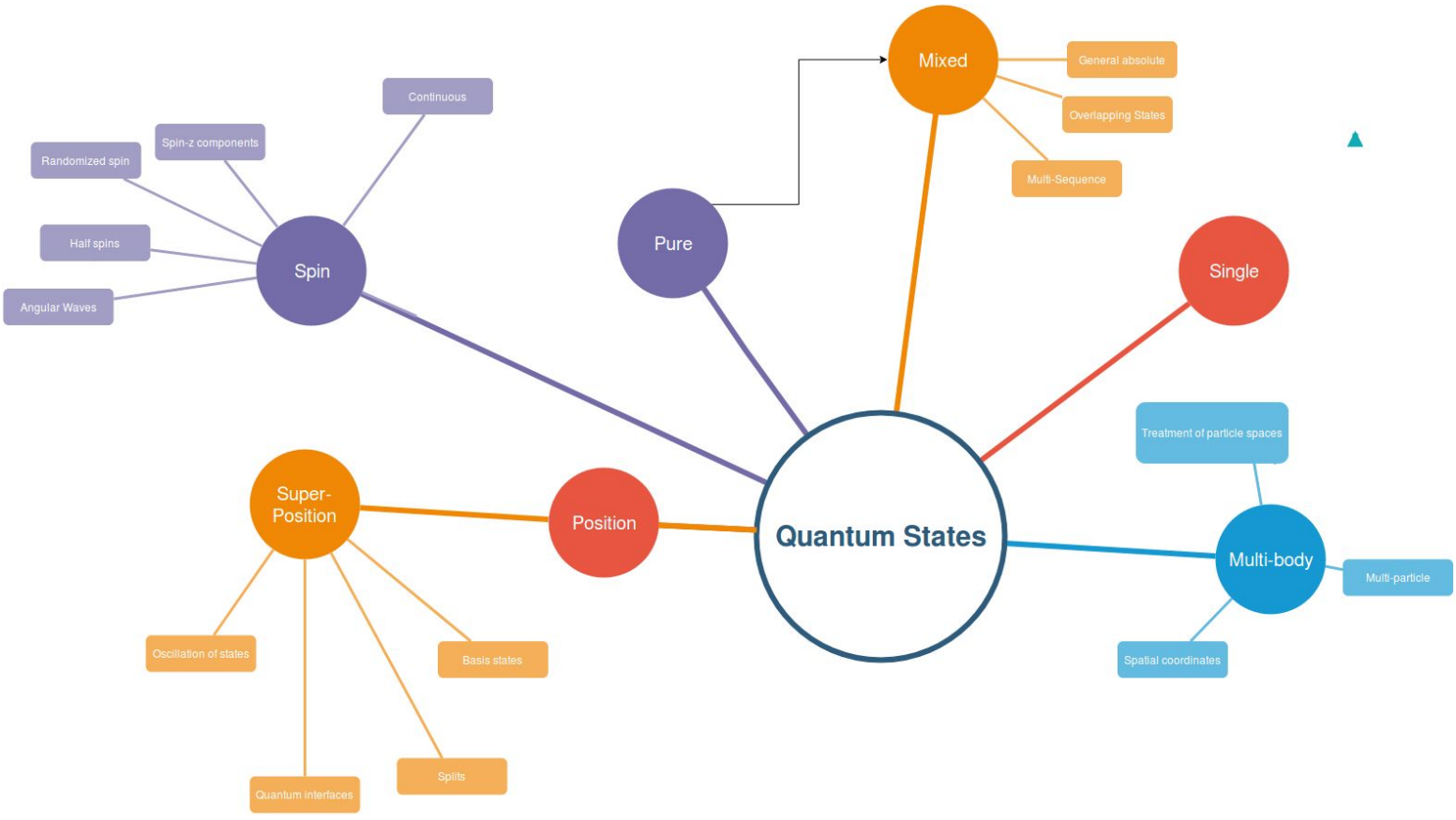
Geometric Symmetry

As we already know, our universe is observably three dimensional. Everything in our universe follows this systematic symmetry or mixed geometry. Even the human anatomy is its own unique symmetry. The fact is that the objective or dimensional views of the universe all follows a systematic pattern as well. Vectors and space as we know is fairly algorithmic and systematically point to point. One can not look at the universe as just set integrals but also as interconnected strings. Even different universes or what is non-observable follows some sort of characteristic pattern with expanding probabilities.

Quantum States



We also have different states of isolated quantum systems. These states are able to describe particle position, vector spaces, and an overall characteristic view that can be utilized in wave propagation.

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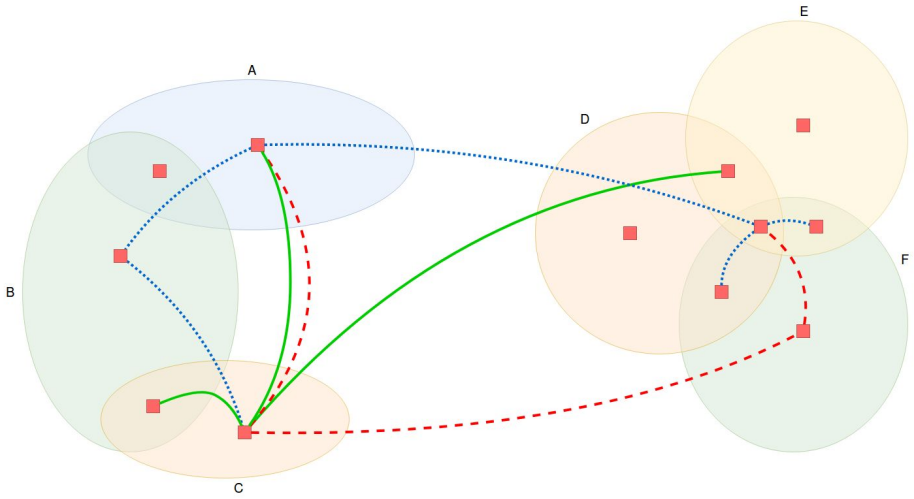
One can utilize Quantum states to have these different sets of linear combinations of time and vector spaces and create a probabilistic and statistical model. Let us say you have a randomized state,Φ. Then let us say this state has different densities and positions for a set particle. The position can either be purely absolute or it can be relative as it is randomized and the set particle can form a string with another particle or break off on its own. The relative vs. absolute position and state the particle is in, is similar to the Schrödinger's cat analogy in which it is in an existent or now non-existent state and what happens in between.

Wave Algo



The above example is a simple diagram to illustrate the following point on waves:

1. Let A represent the starting point (Strand)
2. B and C are object set references
3. F is the wave composition
4. L is the continuation of the wave
5. N represents the end point

One can say all waves systematically represent an object-set reference. In terms of nature, what happens in recursion is that all created, simulated and represented waves are algorithmic. This is an example of the importance of mathematics in terms of the systematic nature of our universe.

Point A → (Propagation) → Point B

The propagation in terms of "waves" is the data or what is being transmitted as set references. This is another way we can represent that nature is purely mathematical recursion.

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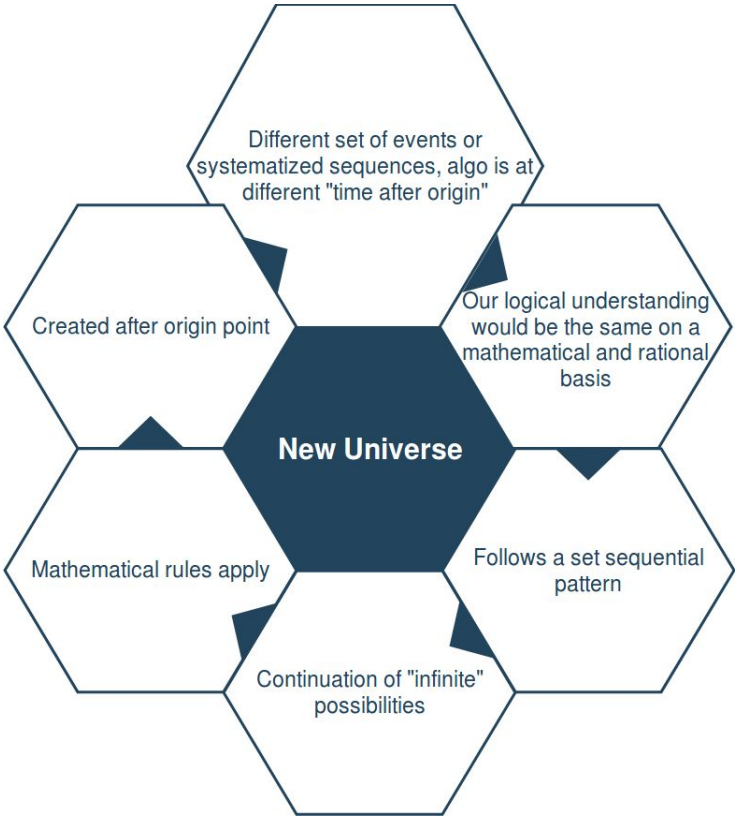
Important Methodology

QSOPR Theorem: Quantum Similarity Origin Point References Theorem
The Ramanujan-Δ-function: τ (n) = O(n 2 +ε) for all ε > 0 19
Set Constraint: Γ = Z ~(S,T),
Objective instance: Z ~ (S,T) = O((S,T) +ε
Boolean Tagging: f : {0, 1} n → {0, 1}
Quasi-Polynomial Proofs: $2^{poly(\log n)}$
Tunneling Algorithms

Our Universe



Our universe has its own set origin, but every multiverse that exists is part of the set origin. Since the beginning of time was the origin point of everything, then even as the universe constantly expands, they all follow everything after this set origin point. Mathematics fundamentally harmonizes everything in nature.

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Natural Sequences

It is certain that:

- ❏ Patterns in nature are sequential
- ❏ Patterns in what is non-observable after time are sequential
- ❏ As the universe expands, recursion is happening
- ❏ Mathematical recursion is the continuation of natural laws for the universe
- ❏ The universe is mathematically constrained towards its own origin

Event Randomization

It is also certain that:

- ❏ While the universe constantly expands, randomization is no longer random
- ❏ Any “halting periods” in nature would mean that:
    - ❏ Randomization is only a thing at halt
    - ❏ Even at halt:
        - ❏ Mathematical recursion was happening since origin to halt
        - ❏ Therefore, everything was mathematically sequential regardless
    - ❏ If the universe is algorithmic:
        - ❏ The only thing that can halt expansion of the universe most not follow the laws of the universe
        - ❏ If nothing existed before origin, then we can’t explain the unknown
            - ❏ If we can’t explain the unknown, it is impossible to prove prior to origin existence
            - ❏ If the universe has its own set origin point then everything is randomized and hence nature isn’t mathematical
                - ❏ Therefore, we come up with the following conclusion:
                    - ❏ Intellectual Design
                        - ❏ Prior to origin point no requirement of mathematical laws
                    - ❏ Randomized
                        - ❏ Mathematical laws are random
                        - ❏ Therefore, the universe isn’t systematic
                            - ❏ Fundamental laws are likely infinitely hypothetical

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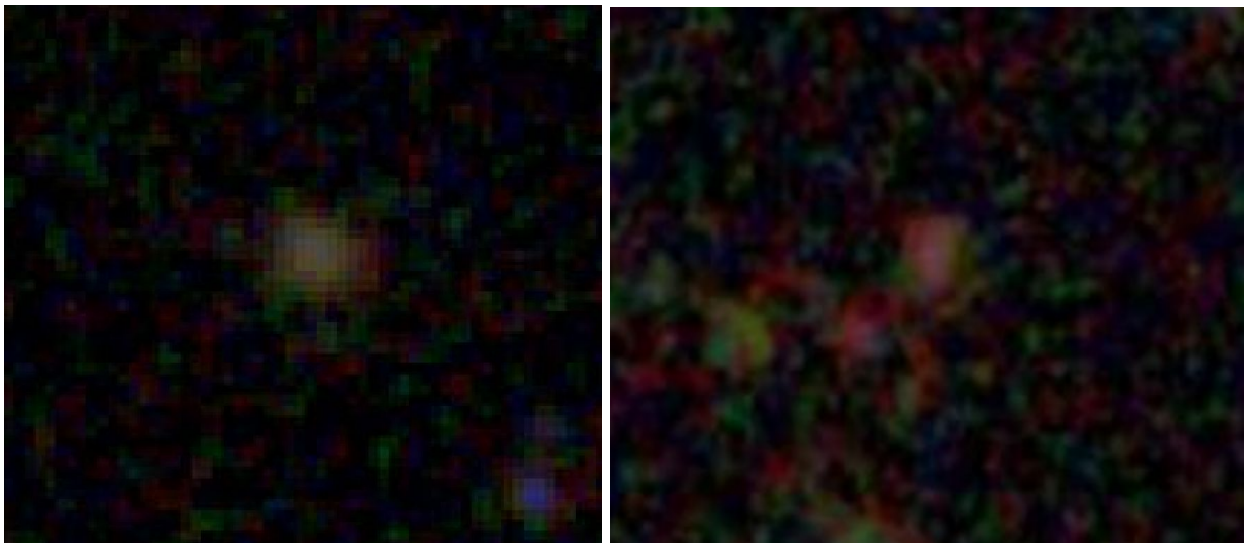
FHB Galaxies



FHB galaxies as described earlier by astronomer Thomas Zolotor are defined as “Faint Hubble Bubble Galaxies”. They are so far that the hubble telescope sees it as faint. This is the maximum of our observation point. What we can possibly see is likely less than 0.00001% of our known universe, and that number is actually very lenient in my guess. It is actually more and more closer to zero given the continuation of our universe and the cosmic activity that takes place. The interesting part is that our universe in essence is seemingly an infinitely expanding mathematical pattern. Even at a theoretical halt, (which is basically near impossible), it would all form a giant mathematical model. Cosmic activity in our universe adds to the algorithmic and recursive nature of the mathematical harmony that takes place. 100s of billions of galaxies can be made seconds by seconds with expanding probabilities following recursive mathematical patterns.

Conclusion

The non-observable universe or what science is far from telling us will never be computationally modeled as much as computationally represented. We can say that the universe is the expanding algorithm with set origin point references. However, we can only model the beginning from time to the continued expansion. It is therefore systematically inaccurate to come up with a view or illustration for all of our universe unless you utilize the basis of an algorithmic system for an overview of your model. This is why all of theoretical physics is modeled as the cosmic origin point and beyond. As seen in the third figure of this paper, what is happening during the continuation of time is the nature of our “universe”.

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