

Source of Quantum Vacuum Fluctuations

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Abstract

The standard model in physics, explains reality only to a certain level. Even after all the sub-atomic particles and waves are catered for, space has quantum wave fluctuation. The paper attempts to describe the source and structure of these wave fluctuations. It seems that the Cosmos may have evolved from one cascading principle of mass. This gradual process is called the principle of Mahat (Mass). The Cosmos is built to perfection without wastage in which all systems act in harmony. Time consciousness helped by energy directs the motion in this cosmos from smaller to bigger formations. The Vaidik view of time and space, cosmic intent and intelligence, as an observer in quantum uncertainty and a source of quantum vacuum fluctuations.

Keywords: Big Bang, galaxy, age of universe, philosophy, ancient wisdom, Vedas, Rig Veda, gravity, dark matter, dark energy, cosmology, quantum physics.

1. Introduction

Is space completely empty? or does it contain something? The space was known to be containing ether by the ancients. Ether was an element of the Greeks, as Aksha was of Vaidik philosophers. It was believed to be existent by Descartes, Newton, and nearly everyone. Ether held a position of absolute centrality in nineteenth-century physics as a way of explaining how light travelled across the emptiness of space.

In 1909, J. J. Thomson¹ said, “The ether is not a fantastic creation of the speculative philosopher; it is as essential to us as the air we breathe”. Michelson and Morley attempted to determine ether, a stable, invisible, weightless, frictionless medium that was thought to permeate the universe.

They aimed to measure the ether drift - a kind of headwind thought to be encountered by moving objects as they ploughed through space. The speed of light could vary as it pushed through the ether with respect to an observer depending on whether the observer was moving toward the source of light or away from it, but no one had figured out a way to measure this. It occurred to Michelson that for half the year the Earth is travelling toward the Sun and for half the year it is moving away from it, and he reasoned that if you took careful enough measurements at opposite seasons and compared light’s travel time between the two, will provide an answer.

Michelson’s interferometer could measure the difference in the velocity of light with great precision. In 1887 they had negative results. Caltech astrophysicist Kip S. Thorne said, “The

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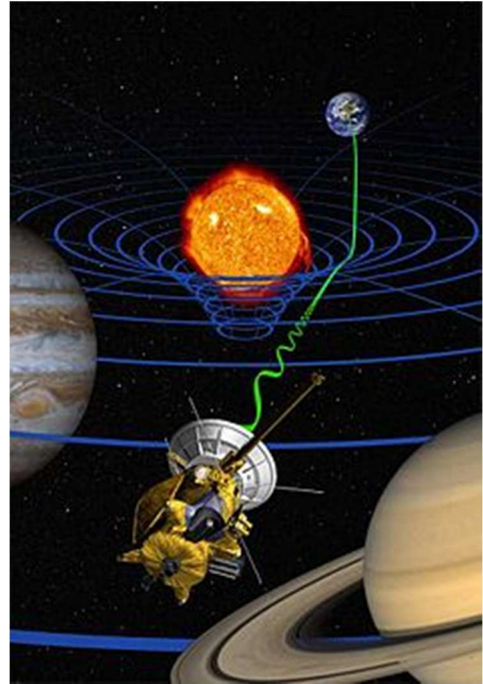
¹ A short History of Nearly Everything- Bill Bryson

speed of light turned out to be the same in all directions and at all seasons.” 20 years later, Michelson became the first American to be awarded a Nobel Prize in physics.

The experiment failed to detect ether and ether is now non-existent but it is known by another name now, the fabric of space-time. The ether drift was probably an incorrect conception as it may be a disturbance caused in space-time by the massivity (gravity for the non-familiar) of an object. Following is the high-precision test of general relativity by the Cassini space probe, radio signals sent between the Earth and the probe (green wave) are delayed by the warping of spacetime (blue lines) due to the Sun's mass².

Experiments show that Einstein's description of gravitation accounts for several effects such as minute anomalies in the orbits of Mercury and other planets. General relativity also predicts novel effects of mass (or gravity), such as gravitational waves, gravitational lensing and an effect of gravity on time known as gravitational time dilation. Many of these predictions have been confirmed by experiment or observation, most recently gravitational waves.

What MM experiment couldn't detect the effect of either at small distances and within the Earth's space-time disturbance, this could be detected by the Cassini space probe, in form of gravitational time dilation (disturbance of space-time affecting the speed of radio waves).



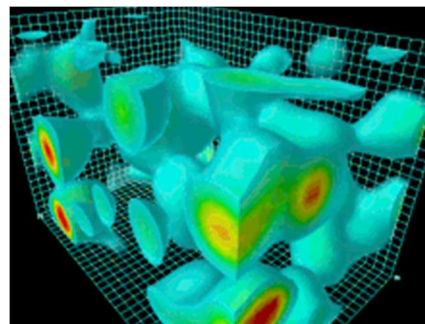
2. Quantum Vacuum Fluctuations

Empty space not only contains the fabric of space (as format) and time (the flow of energy) but also some other energy fluctuations. This so-called empty space is still not empty enough, we have just reached the deepest level of detection of such energy by any experimental methods and inference. Even if everything, every known particle or wave is catered for in space which is zero point space there is still some energy that can be attributed to space itself. This energy form may be termed quantum vacuum fluctuations³ and they represent the temporary random change in the amount of energy at a point in space, as prescribed by Werner Heisenberg's uncertainty principle.

² https://en.wikipedia.org/wiki/Introduction_to_general_relativity#Cosmology

³ https://en.wikipedia.org/wiki/Quantum_fluctuation

These fluctuations are minute random fluctuations in the values of the fields which represent elementary particles, such as electric and magnetic fields which represent the electromagnetic force carried by photons, W and Z fields which carry the weak force, and gluon fields which carry the strong force. Quantum Vacuum fluctuations appear as virtual particles, which are always created in particle-antiparticle pairs. Since they are created spontaneously without a source of energy, vacuum fluctuations and virtual particles are said to violate the conservation of energy. This is theoretically allowable because the particles annihilate each other within a time limit determined by the uncertainty principle and therefore, they are not directly observable.



Wave mechanics uses mathematics to describe various characteristics of the complex wave patterns and probabilities of wave function collapse, having a background perspective that these waves are random natural phenomena and by deciphering their source and characteristics we may arrive at ‘A Theory of Everything’. This kind of perspective is leading us in direction of ideological hallucination as we have employed mathematical tools for something that may have been interfered with or modulated by intelligence or “will”. It may be easier to describe and predict a simple geometrical pattern on a screen mathematically but not a live show simply because that latter has intelligence interference.

3. The Construct of Energy-Time-Space

Quantum mechanics implies inherent randomness to nature. This randomness caters to the construct to accommodate the free will of the atomists. It has moved a level deeper since science has progressed deeper into energy fields going deeper through the atoms. Einstein addressed this in a letter to Max Born, one of the fathers of Quantum Mechanics. The full phrase is, “Quantum theory yields much, but it hardly brings us close to the Old One’s secrets. I, in any case, am convinced He does not play dice with the universe⁴.”

This doesn’t mean Einstein was deterministic or he rejected the idea of free will, but he simply rejected the wither this way or that way uncertainty of quantum mechanics. For example, even if we are watching or not, a top quark becomes a top quark not by one of the choices but maybe there is some unknown factor that helps it (and also many others) to make that choice.

As Albert Einstein quotes about imagination, “I am enough of an artist to draw freely upon my imagination. Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world.” Treating this issue like a mathematics problem, we may use a supposition or assumption Method a Math problem-solving technique where we assume an extreme situation to solve a question. This method is often seen as a faster alternative as compared to the Guess and Check method. Almost all scientists would concur with the fact that there is a perfect brain behind the Cosmos and this thought is reflected in their statements. Let them be not sure about

⁴ <https://www.zmescience.com/other/feature-post/einstein-christian-15102017/>

god but the laws of nature, what governs the sciences, laws of mathematics and logic, there is some superintelligent source for them. So let's assume that such a source exists and it doesn't need any manifest mechanism of energy or matter, it could be some different dimension or realm that we are not privy to, or aware of but we are certain.

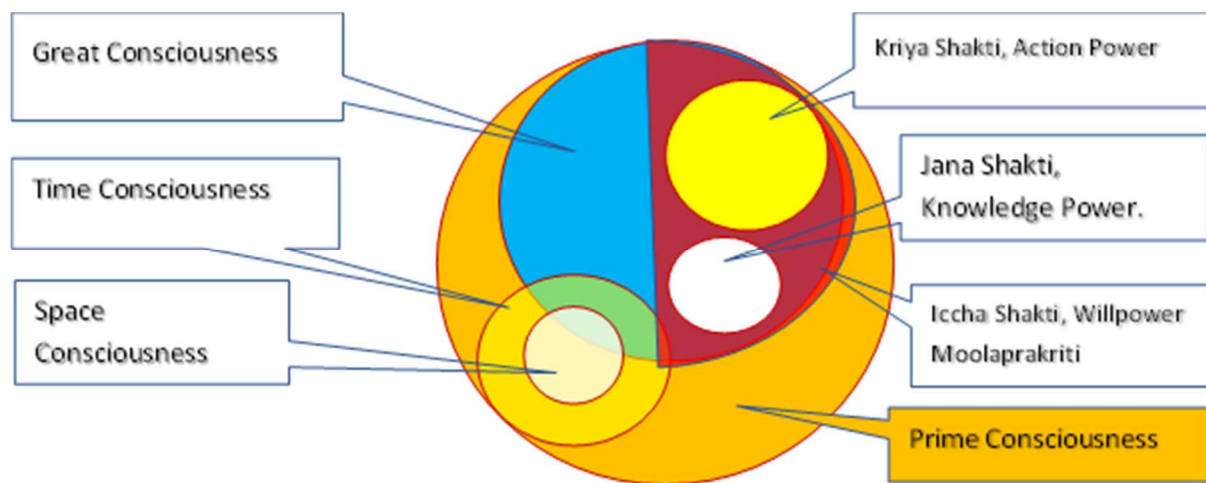
Such a perfect source of superintelligence beyond the known dimensions is conscious and has its issues, so much of superintelligence and nothing to do except run into ideological hallucinations. Such ideological hallucinations are described as Asat. To create Sat – intelligence, truth, reality, and feasibility of those ideas there is a need for action to exercise the will of the superintelligence.

ॐ असम्भवस्तु सतोऽनुपपत्तेः ॐ ॥ २.३.९ ॥

The Sat does not originate from the impossible.

This superintelligent power creates a plan, earmarks the resources (its processing power) and creates a thought force of will that is instantaneous. Let us assume time and space as absolutes without any measurement that we know of. Time is a manner of sequencing causality in the thinking process as to what leads to what. Space may be thought of as the extant of land available to a single farmer on the earth and he making use of the arable cultivable patch of land as per his capacity.

The superintelligent being (Prime Consciousness) dedicates the parts of his capacity to creating the thought force of will (software to subtle hardware transition) and uses another part of his processing capability to sequence and regulate the spread. All action is achieved by the thought force and all controlling is regulated by processing power. The Venn diagram below will show this better.



There is a reason why the above assumption is made in this particular way. It is because is also described in Upanishads in this particular way. So instead of re-inventing the wheel, we can examine a pre-existing concept.

The willpower is called Moolaprakriti or root nature. This is primal vibration, substratum or hardware of the cosmos. It is also known to be having three attributes of Sat (intelligence), Rajas (control, action) and Tamas (energy). This energy which is the base mortar is controlled and directed by its own energy sub-streams which are embedded by other conscious subparts which act as the controlling software.

The Sat is responsible for the universal mind and it rides on the digital (measured) energy streams and resided in the complete universe, formatting it the way a field is prepared. The action energy is responsible for movement and directing the root energy streams in the formation of further higher-density streams. these vibrations in such a way produce harmonic interference patterns leading to attributes like frequency, wavelength, polarisation etc. The process of formation of dense energy layers and matter etc is from the same cascading pattern of one root nature substratum and it is named Mahat.

4. Cosmic Intelligence as part of QVF

The formatted space has a particular way the energy flow takes, and it is further grouped as Akshar (unchanging) and Kshar (changeable). Akshar is the root of intelligence, mind, and self and it helps passively in shaping the Mahat. The form, sound and colour (Varna) and its alphabet are not only the Akshar (letters) but also contain the numbers. The space is one manifestation of Kshar Shabda (word) and the other is of Akshar Shabda as the universal mind.

Moolaprakriti thought force is associated with numbers. The integers denote various forms and combinations of Moolaprakriti. An infinite series of repetitive patterns in nature exists (presently incorrectly known as the Fibonacci Sequence) of the addition of the previous two forming the next number. The alphabets represent modifications of the primal energy (Moolaprakriti) with consciousness and their resultant words and language. This force translates into the vibrations of a certain frequency and carries that significance in shaping the root sub-atomic particles which are the building blocks of matter. The influence of thought vibrations can be illustrated.

Such cosmic language is known as Para. Para means remote or beyond and this belongs to Paramesvara. It contains Ashar and Kshar (non-continuous, discreet, measures, consonants and Kshar, Svar, changeable, vowels). Like that in language, these vowels bind the consonants in a word.

This language ridden with intelligence may represent the coding of Quantum Vacuum Fluctuations. The frequency and complexity of quantum vacuum fluctuations display how much processing of such energy has taken place before it reached this subtle level. As the waveform becomes laden with attributes of frequency, beats, amplitude, phase etc the speed may get reduced.

ॐ अक्षरमम्बरान्तर्धृतेः ॥ १.३.१० ॥ The akshara (consonants) are basis of space.

ॐ सा च प्रशासनात् ॥ १.३.११ ॥ And that from the command (of Akshar).

ॐ अन्यभावव्यावृत्तेश्च ॥ १.३.१२ ॥ Other forces make up vrittis (wave spirals)

The idea of creation from nothingness to expanding spheroid (Brahman) starts from the integration of initial vibration Aum (Pranav Shabda) with time, forming space and non-manifesting wavelet strings. These wavelet strings further integrate into time and space using many combinations and permutations of conjunctions and disjunctions creating forces and the wavelets, strings, waves, rays, unstable elementary particles, quarks and so on.

**आकाशात् तु विकुर्वाणात् सर्वगन्धवहः शुचिः
लवाञ् जाते वाः स वै स्पर्श-गुणो मतः ॥ १-७६**

But from the ether (space), changing itself, springs the pure, powerful wavelets, the vehicle of all perfumes; that is held to possess the quality of touch (exertion of force, a cause).

**वाः अपि विकुर्वाणाद् विरोचिष्यु तमोनुदम्
ज्योतिर् उत्पद्यते भास्वत् तद् रूप-गुणम् उच्यते ॥ १-७७**

Next from wavelets modifying (by combining in various permutations and combinations), proceeds the brilliant light, which illuminates and dispels darkness; is declared to possess the quality of colour (visibility).

ॐ ज्योतिषि भावाच्च ॥ १.३.३२ ॥ and the light has a force.

ॐ कम्पनात् ॥ १.३.३९ ॥ Vibrations

ॐ ज्योतिर्दर्शनात् ॥ १.३.४० ॥ It is seen by light.

ॐ आकाशोऽर्थान्तरत्वादिव्यपदेशात् ॥ १.३.४१ ॥ The space is described different by the way of manifestation.

The formation of matter (heavier from lighter) is according to that one cascading principle of Mahat. Brahman becomes the playground of both intelligent and intelligence-driven energies. Mathematics is a play of energy, numeral 0 indicates the root i.e. consciousness and 1-9 are Shaktis with each digit representing a different potential or amplitude.

5. Time Consciousness (Theos) affecting the Quantum Uncertainty

The consciousness is often compared to or referred to as a person for ease of understanding by the philosophers as a cosmic person, Theos or Vaishwanar.

ॐ वैश्वानरः साधारणशब्दविशेषात् ॥ १.२.२४ ॥

Vaisvanara (the Cosmic Person) is also manifested by the same words arranged in a special way.

ॐ शब्दादेव प्रमितः ॐ ॥ १.३.२४ ॥

These words are measured (digital).

ॐ देवादिवदपि लोके ॐ ॥ २.१.२५ ॥ The world too is like the Deva (Vishavanara).

Quantum mechanics states that energy, momentum, angular momentum, and other quantities of a bound system are restricted to discrete values (quantization), and objects have characteristics of both particles and waves (wave-particle duality). Space channel and their shapes may be the reason for the quantisation.

The electron acting as a wave or particle or a quark becoming a top quark, down quark or a charm quark etc, has an uncertainty which can be affected by an observer. But how the observer affects that and which way the event will turn up is uncertain. The Copenhagen interpretation consisting of views of Niels Bohr, Werner Heisenberg and other physicists states the probabilistic nature of quantum mechanics is not a temporary feature but is instead a final renunciation of the classical idea of "causality". The logic of causality is perennial and axiomatic. The permanent observer of the event here is intelligence contained in space and time energy shaping up the motion. Brahm Sutras state the following.

ॐ अन्तरा विज्ञानमनसी क्रमेण तल्लिङ्गादिति चेन्नाविशेषात् ॐ // २.३.१५ //

Intervening mind and science (knowing in special way) in particular order that is mark of general consciousness.

ॐ चराचरव्यपाश्र्वस्तु स्यात् तद्व्यपदेशो भाक्तः तद्भावभावित्वात् ॐ // २.३.१६ //

It is spread in conscious and non-conscious, depending on the forces, the expression of light transforms. The aphorism talks about the intelligence spread in space which may be part of the quantum vacuum fluctuations and the unified field. Therefore, in the famous cat experiment by Schrodinger, the cat will live or die as per the action of the cosmic observer.

6. Conclusion

Philosophy paves the way for theories and theories combined with mathematics and/or experimental proof pave the way for science. The human mind carries out interactions with nature to understand and evolve. These interactions take place not only through the human sense organs or scientifically extended sensors but also through direct and indirect human perception. Human perception contains higher algorithms for receiving knowledge through the higher language of Para. If the assumption can explain the riddle of life in the cosmos then the hypothesis is proved. Quantum uncertainty can be solved and the mathematical solution to quantum wave fluctuation can be understood as to why it may not exist. In the quest to know humanity moved a step closer and evolves. Science helps us evolve in a much more organised way.

References

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