

# Science Emerging from the Upanishads

Attempted by:

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## **Abstract:**

Is the standard model of fundamental-particles, with six quarks, leptons, photons and force carriers....., final? Or there is something beyond it? And, how to accommodate our direct experience of ‘consciousness’ in Physics? As an attempt to seek answers to these questions, an alternative view emerging from the ancient spiritual scriptures, namely Upanishads, is presented here for consideration of scientists.

## **1. Introduction**

Upanishads are concluding chapters of the four volumes of Vedas. Out of the total 108 Upanishads, eleven are considered ‘major’. Out of them, study of five major Upanishads is considered sufficient for gaining the knowledge ; so these five are considered here.

The conclusion emerging from them is: that the ultimately fundamental substance of the universe is not only a real substance but it has also a property of ‘self awareness’ or , consciousness’. It will be interesting for the scientists to recall Max Planck’s words: “ I regard ‘Consciousness’ as fundamental. I regard matter as derivative from ‘Consciousness’. We cannot get behind ‘Consciousness’ . Everything that we talk about, everything that we regard as existing, postulating ‘Consciousness’.” Max Planck, theoretical physicist, who originated quantum theory which won him the Nobel Prize in physics, in 1918.

Some current researchers on ‘consciousness’ believe that a conscious system must contain huge storage of memory, efficient data-retrieval and data-processing power. e.g. According to Prof. Krick: “ Consciousness is a process of combining attention with memory.”

In my opinion what they call as ‘conscious system’ seems to imply the process of Mind. The jobs of the ‘Mind’ are perception, cognition, decision and response. Therefore ‘mind’ definitely needs a hardware for memory-storage, data- retrieval and processing . The hardware of our ‘Mind’ is our ‘Brain’. But the property of being aware can be a property of a fundamental field, as was indicated in ref.1. It seems, from the statements of the Upanishads, that the most fundamental reality possesses a property of self awareness, a pure Consciousness.

In the next section we shall look at the statements from the Upanishads: and in the subsequent section, attempt to formulate a new science, with an aim to seek answers to the questions raised in the abstract.

## 2. Collected statements from the Upanishads:

### 2.1 ईश आवास्यम इदम् सर्वम् , यत् कींचित जगत्याम जगत

Meaning: Everything that we find in this world is pervaded by Isha, the Ultimate Reality.

तद एजति , तद न एजति , तद दूरे तद अन्तिके ।

तद अन्तरस्य सर्वस्य, तद उ सवस्य अस्य बाह्यत ॥

Meaning: That Ultimate Reality is in the vibrating state somewhere and in non-vibrating state elsewhere. It is Inside everything and being and that alone is present outside of them all, i.e. everywhere.

2.2 in the next Upanishad, namely Kena-Upanishad, a student asks a question to his teacher:

केन इशिताम प्रतति प्रेषितंम मनः , केन प्राणः प्रतति प्रेषियुक्तः।

केन इशिताम वाच इमाम वदन्तिः, चक्षु-क्षेत्रम कउ देवः युनक्ति ।

Meaning : Because of whom the mind is able to think? Because of whom, the physiological functions of the body are running? Because of whom the speech is able to speak, and who unites the inputs of eyes and ears?

The Teacher replies:

क्षेत्रस्य क्षेत्रम् ,मनसो मनोयद

चक्षुषः चक्षु , सउ प्राणस्य प्राणः

तदएव ब्रह्म त्वम् विद्धि ।

न इदम् यद् इदम् उपास्यते ॥

Meaning : That, which is the ear of the ears and that which is the mind behind the mind ; that which is the real eye behind the eyes is also the force behind all physiological functions. You know that alone as the Brahman (the ultimate Reality) and not the idols of various shapes, which people worship here.

2.3.1 in the Kathopanishad the teacher Yama explains to a student Nachiketa :

अग्नि यथा एकः भुवनंम् प्रविश्य, रूपम्-रूपम् प्रतिरूपम् बभूव ।

एक तथा सर्व-भूत-अंतःआत्मा , रूपम्-रूपम् प्रतिरूपम् बहिःच ॥

Meaning: Just as fire , which is essentially one, appears to be different in different names and forms, (e.g. fire of burning wood and the fire within our physiology, of burning glucose by the oxygen contained in the blood), so exactly the Ultimate Reality within every thing and being is one, which has assumed various names and forms. And it is also present outside of all the names and forms, i.e. everywhere.

नित्यो नित्यानाम् , चेतन चेतनाम् ,एको बहुनाम् यः विदधाति कामान् ।

तमात्मस्थम् ये अनुपस्यन्ति धीराः, तेषाम् शान्ति सास्वती न इतरेषाम् ॥

Meaning: THAT, which remains permanent among the temporary objects of various names and forms, ‘that’ Ultimate Reality is the life and consciousness of all the living-beings, the one reality among many. The patiently-studying people, who are able to see it seated in them as pure consciousness, to them belongs the permanent peace and not to others.

2.3.2 यदिदम् किञ्जगत सर्वम् प्राण एजति निःश्रुतम् ।

महदभयम् वज्रउद्यतम्, य एतद् विदुः अमृताः ते भवन्ति ॥

Meaning : Whatever is there in this universe is trembling; like a person trembling out of fear when a powerful weapon called Vajra is aimed at him.

2.4. In the Mundakopnishad a chancellor of a forest-university, namely Shaunak, approaches a Rishi namely Angiras; and asks:

**कस्मिन्नु भगवो विज्ञाते सर्वम इदम विज्ञातम भवति इति ?**

Meaning : Respected Sir, what is that, knowing which everything becomes as well known?

( The Rishi noticed that the professor is feeling somewhat un-comfortable. So to create a lighter atmosphere the Rishi asked: Dear professor, do you think knowing the prices of daily use commodities is not required? Both, the knowledge of day-to-day use as well, as the higher knowledge, are needed to be known, isn't it? And then both of them laughed ! )

Then the Rishi started the exhaustive reply to his question:

**यद तद अद्रश्यम , अगोत्रम , अचक्षु-क्षोत्रम , तद अपाणी-पादम ।**

**नित्यम विभुम, सर्व-गतम शुक्षुक्षम , याथा तथ्य तोरथन व्यदधात व्याधतिच समाभ्य ॥**

Meaning: THAT, which is invisible to eyes, not descended from anything more fundamental than that, which is without any separate parts like eyes and ears, hands and legs; that which is eternally ever-present and permanent in time and all-pervading in space; pervading in-and-through every thing and being because of its fineness... (this writer is un able to translate the remaining Sanskrit words of the stanza) Then the Rishi Proceeds :

**यथा उर्णनाभः श्रुजते गृह्यते च ।**

**यथा प्रथ्वव्याम औषधयः सम्भवन्ती ।**

**यथा सत पुरुषात केश-लोमानी ।**

**तथा अक्षरात संभवती इह विश्वम ॥**

Just as spider creates a cob-web , and eats it back if too hungry; just as various plants and herbs grow out of the earth; just as on the body of a living man hair

keep growing, so exactly from the imperishable Ultimate Reality this Universe has got born.

**एतस्मात् जायते प्राण, मन सर्वेन्द्रियाणी च ।**

**खम, वायु , ज्योति, आपः, पृथ्वी विश्वस्य धारिणी ॥**

From that are born the energy and forces of nature, the ‘mind’; and all the organs of perception and action. And from that alone are born the space, the air, the fire, the water, and the earth.

2.5 In the Mandukya Upanishad it is stated that everything which is now present , which existed in the past and will come into existence in future is termed as AUM, the Ultimate Reality. Just as the pronunciation of ‘ॐ’, ‘a’ is present in every latter and words , so exactly the Ultimate Reality is present in every thing and being.

The Ultimate Reality can be subjectively experienced in four different states:

- 1) The waking state, which can be felt while pronouncing the sound “ॐ” “Aa”;
- 2) The dream state, which can be felt while pronouncing the sound “उ” “Uu”...;
- 3) The deep sleep state, which can be felt while pronouncing the sound “म” “Mm”...;
- 4) And there is a fourth state of Consciousness, of pure awareness, without any thought or imagination. When we repeat the “Mantra” AUM.....AUM.....AUM....’ the silence between the two mantras gives us a feeling of pure Consciousness. This pure Consciousness is the subjectively perceivable pure aspect of the Ultimate Reality.(UR) . The UR is objectively also the most fundamental, real, reality; but it is imperceptible through eyes.

2.6 A book titled : Yoga–Vashistha–Ramayana, contains teaching of the Guru Vashishtha to the Prince Rama. In that book we find a stanza:

विस्वम बिची विलास अयंम, चित-सुधा-अब्धे उदेति यः ।

विलीयते च तत्र एव, मध्ये कथं तद-मयम ॥

Meaning : This universe is a play of waves, arisen in the ocean of immortal consciousness., the Ultimate Reality. It also subsides in that ocean alone. So it is said to be always contained in the Ultimate Reality.

### 3.0 Science Emerging from the Upanishads :

3.1. From the Section-2 we find that according to the Upanishads the most fundamental substance of the universe is all-pervading in space and eternally ever-present in time. So we can postulate the Ultimate Reality as an all-pervading continuum, or a highly fine field.

3.2.1. According to Isha-aavasya Upanishad, it (the U.R) vibrates somewhere and it does not vibrate in the remaining region.

3.2.2 According to Katha-Upanishad also the Universe is vibrating like someone who is trembling out of fear when "the most powerful weapon Vajra is aimed at him.

So we can postulate the UR as Vibrating or fluctuating field, or continuum.

### 3. 2. The Postulates:

(i) 'Space' is not a void extension of nothingness; rather, there exists a highly subtle ultimate reality which is present everywhere in the space, for all the time.

(ii) This Ultimate-Reality is free to remain steady or fluctuate or vibrate; so there are 'fluctuations' or 'perturbations' spontaneously sprung in it. The 'fluctuations' generated in the UR get transmitted in the manner of 'waves' at a constant speed of light. 'Energy' and 'matter' are just a 'process' or a 'phenomenon' of fluctuations' generated in the UR; they are just a dynamic aspect of the UR. We are so far able to perceive and measure only the 'dynamic aspect of the UR' with the help of instruments made up of 'energy' and 'matter'.

### 3.3 Steps leading to the true nature of 'fundamental particles':

**Theorem-1: The displacements in an all-pervading continuum form a closed-loop path.**

(i) We can imagine the Ultimate-Reality as a 'continuum'. Because of 'continuum' nature of the ultimate reality (UR), when a small labeled part in it moves from 'a' to 'b' as shown in fig.1, it gives rise to a chain of displacements, completing a closed path; by the dot 'z' occupying the place of 'a', as shown in the fig.1 below:

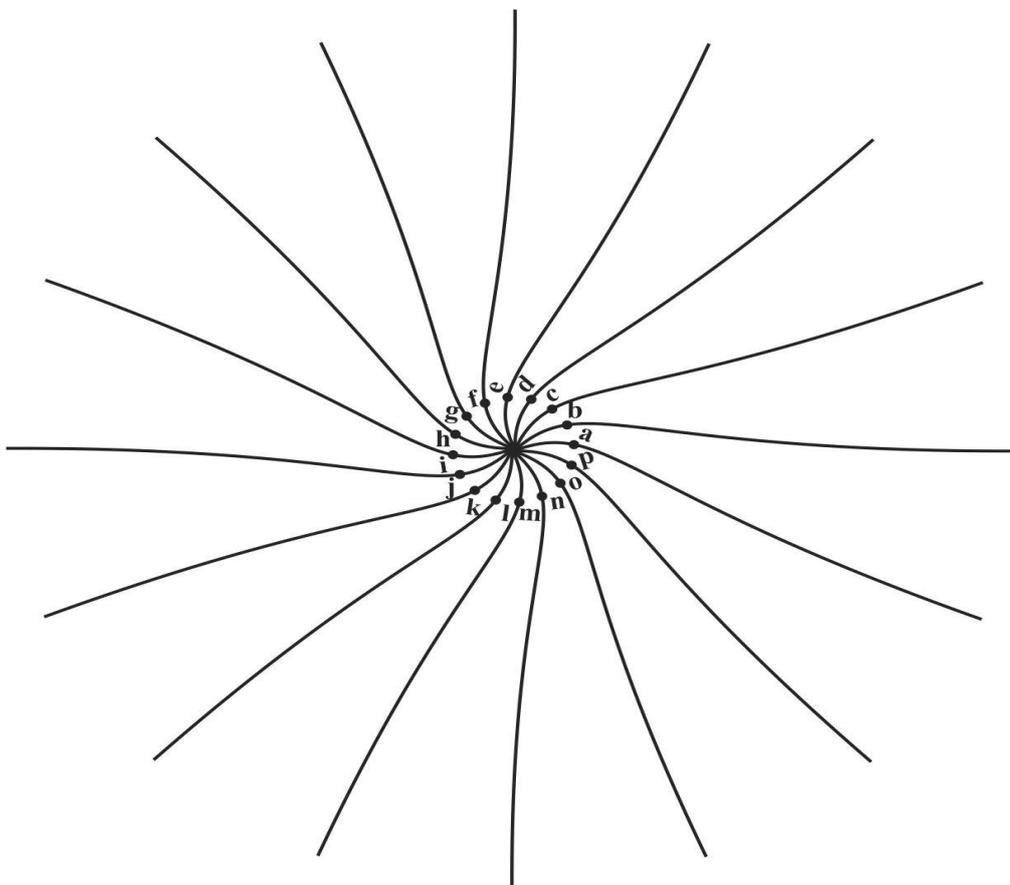


Fig.1: Because of the continuum nature of the ultimate reality, when a small labelled dot 'a' moves to 'b', 'b' moves to 'c' ....completing a closed path by 'z' shifting to 'a'.

**Theorem-2:** There is no preferred axis about which these dots should complete a closed path; so they move partly about x-axis, partly about y-axis and partly about z-axis to complete the closed path. So this path can be described as a small-circle on an imaginary 'large-spherical shell' in the UR. The following description will be helpful for understanding the above statement.

Let us imagine a solid rod AB fixed at its center O. Then rotate its end A clockwise such that the point A forms a small circle. The center of the rod will

remain fixed, but the other end B of the rod will appear to rotate anti-clockwise forming a small circle, when viewed from the other side of the rod.

Now imagine a spherical cell fixed to the rod AB, such that the center O of the rod forms the center of the cell; so, as soon as the rod AB rotates as discussed, the whole spherical cell will also rotate; and every point on it will form a small circle. Then imagine this spherical cell as a part of a continuum medium. So when the cell rotates as described, a standing wave will get generated in the continuum medium. As we go radially-outward, the amplitude of the wave will go on reducing because of availability of larger and larger area, as was shown with the help of diagrams in the reference-2.

Finally we can understand the amplitudes of above-discussed standing wave as amplitudes of fluctuations of the most fundamental field, namely the U.R.

**Theorem-3:** This 'process' of close-loop-fluctuations of fields experiences no resistance, and so these spherical patterns of fluctuations continue for millions of years. There are integer number of such discrete fluctuation-patterns, as shown in fig.2 below, to which we perceive as the 'fundamental particles' like the quarks. Fig.2 shows that the amplitude of waves increase with radial distance up to the quarter wavelength, and then start falling inversely with further increase of radial distance. These fluctuations generated in the ultimate reality get transmitted at a finite velocity, of light.

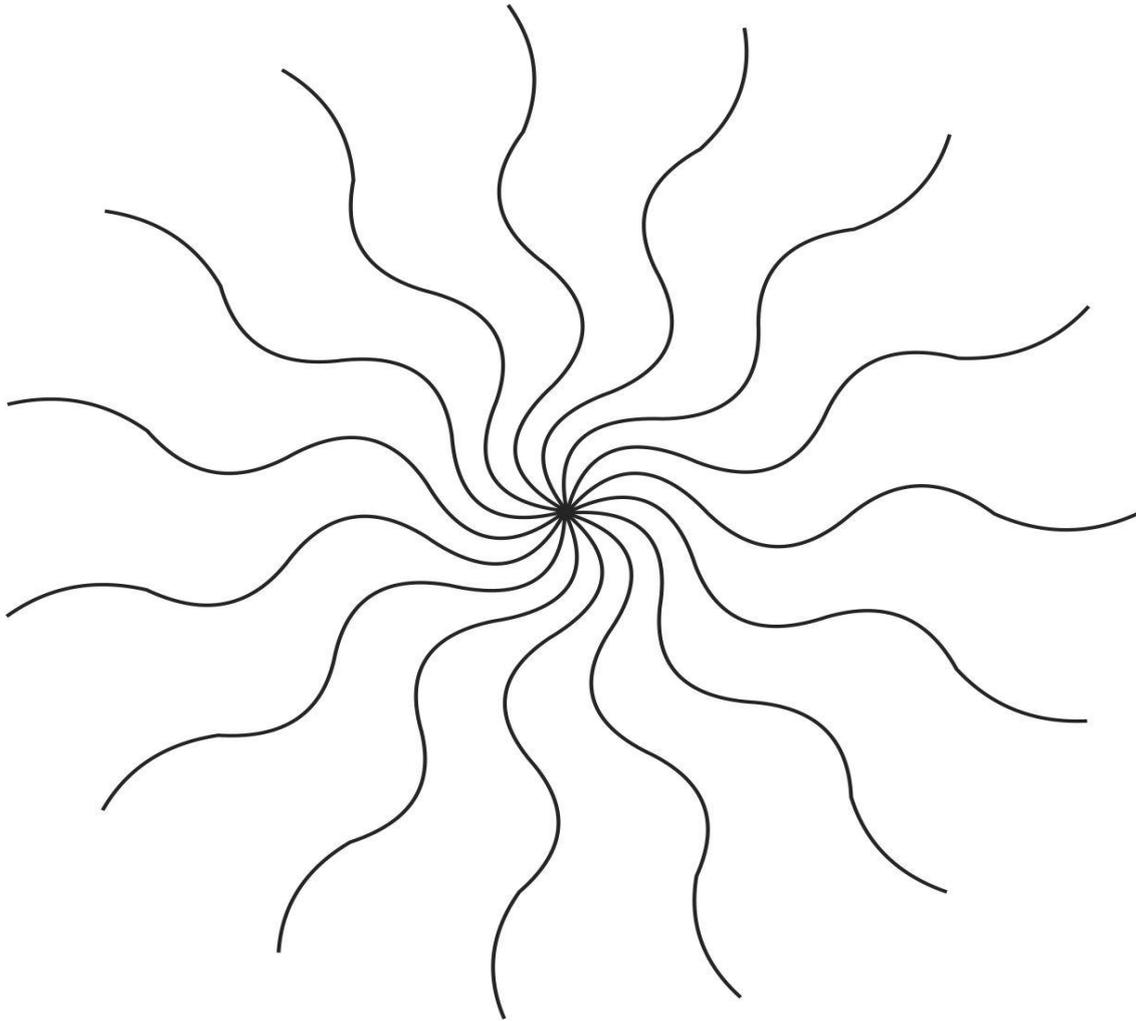


Fig.2: A “snap-shot” of wave-amplitudes of a “cross-section” of the ‘spherical-fluctuation-pattern’.

(iv) The figure below shows the peaks of wave-amplitudes of the above spherical fluctuation-pattern.

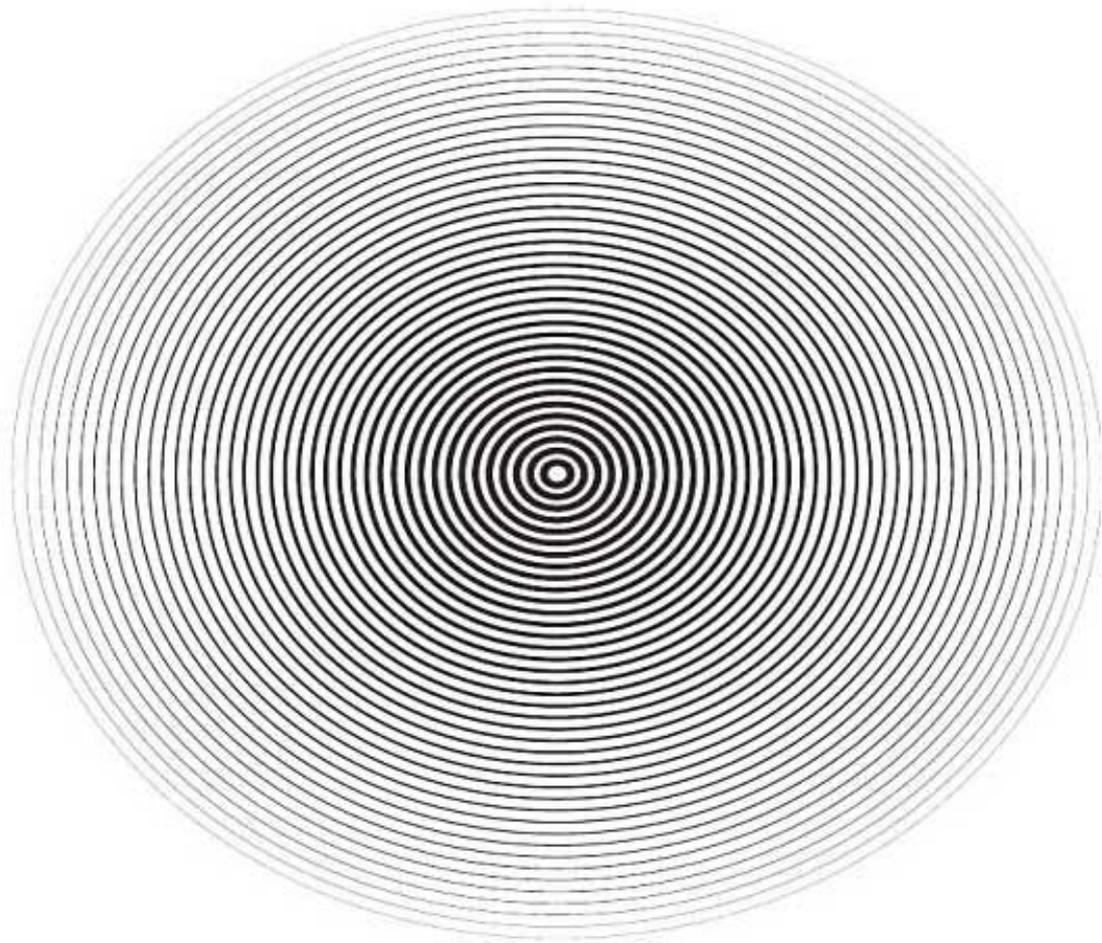


Fig.3: Concentric-circles showing peaks of wave-amplitudes of the 'spherical-fluctuation-pattern'

When three patterns of the previous figure interfere, they give rise to radial lines of maxima and minima as shown in fig.4 below.

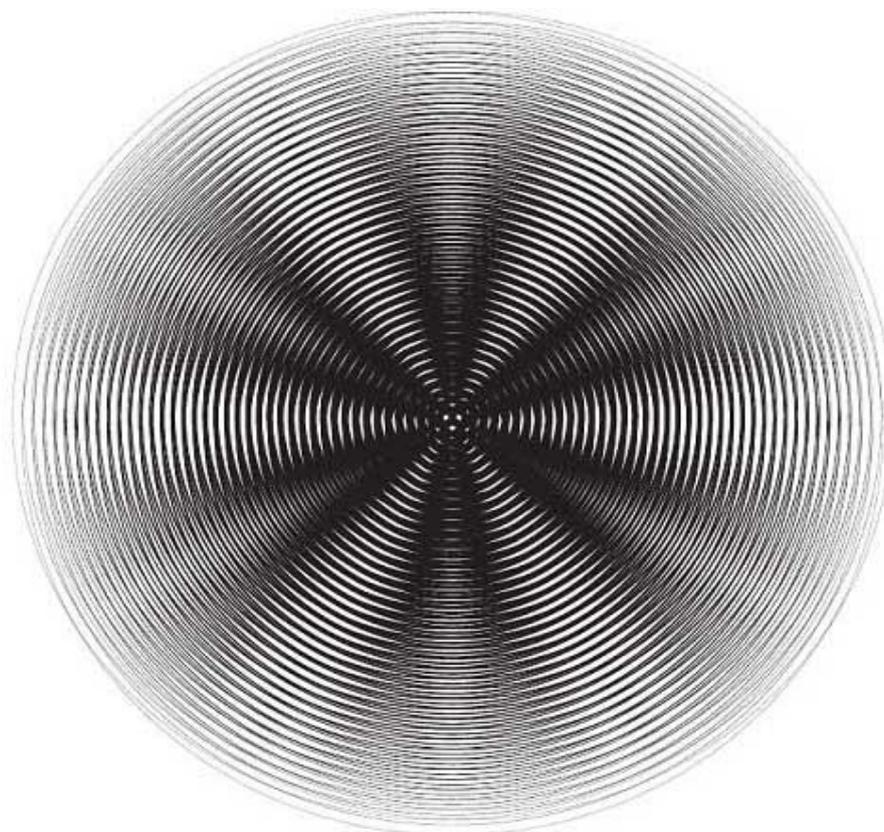


Fig.4: Interference of three spherical-fluctuation-patterns, whose maxima emerge as radial-lines.

When such radial lines, of the above figure, interfere with another set of radial lines, they give birth to a pattern very similar to the 'magnetic lines of force', as shown in fig.5 below. Thus it is the spherical fluctuation-pattern, which is the most fundamental, whose hierarchical layers of interference appear as different kinds of fields, like the 'electric-field' and the 'magnetic-field'.

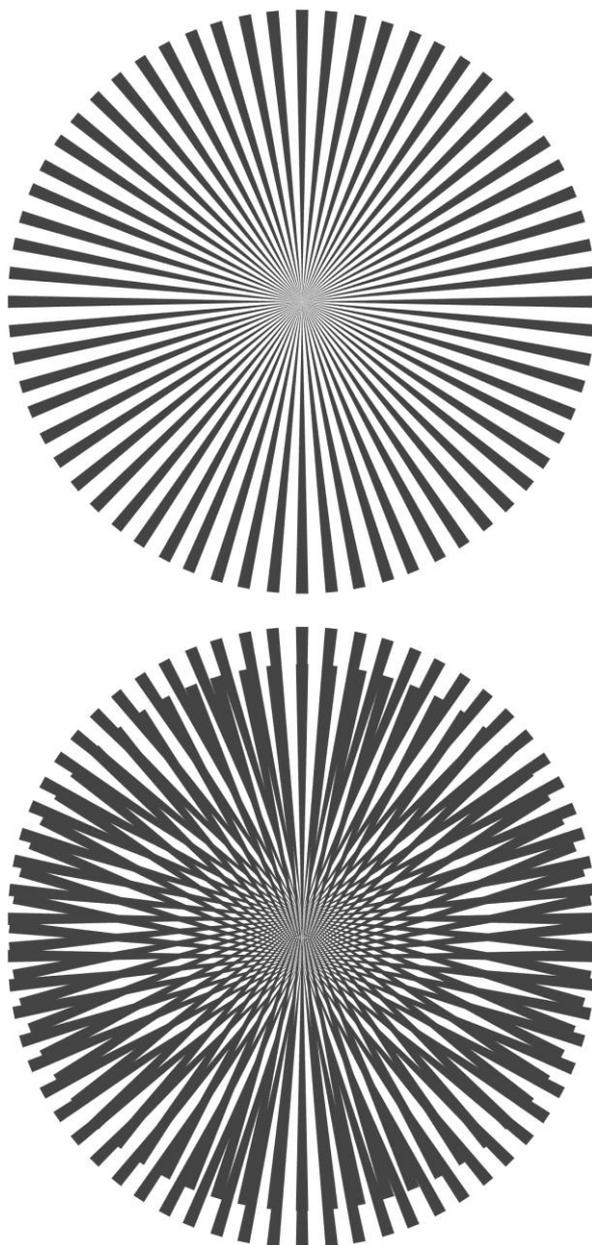


Fig:5: Radial-lines (top) representing interference-maxima of the previous figure; and second layer of interference of two such radially-outwards-lines(bottom) producing a pattern similar to the ‘magnetic lines of force’ around a permanent-magnet.

Because these spherical patterns shown in fig. 2, are of micro-microscopic size, they appear to us as ‘point particles’; so they can be mathematically represented as ‘pulse-function’ in space; and it can be Fourier transformed in to the wave-number-domain giving a wide band of wave-numbers. The pattern can also be represented in the frequency-domain, as a wide band of frequencies. Now, if the spectral components of two such spherical patterns are coherent, then they add

constructively and bring the patterns closer and closer; and when they add destructively then they repel the patterns away from each other. In the case of radio-station-antennas and arrays, the amplitudes of waves get added or subtracted and the antennae remain firmly fitted in the ground; whereas in the case of interactions of the 'fundamental-particles' depending upon the constructive or destructive interference of waves, the antennae (i.e. the particles-themselves) change their positions! So, 'fundamental-particles' are like 'free-floating-antennas!' The strength of interference depends on the coherence of spectral components.

**Theorem-4:** Because of the all-pervasiveness of the U.R. the above-discussed continuum is present everywhere in space. So it cannot move linearly in any direction. But it can vibrate by forming a circular path, so we can get only spherical patterns of integer, whole number, of patterns of the vibrations of U.R.

### **3.3 Nature of fundamental particles:**

It is proposed here that these spherical patterns of vibrations generated in the U.R are likely to be the most fundamental particles of modern science. Such vibrations can form different modes of vibration. They may appear to vibrate clock wise or anticlockwise from any direction. The patterns may even spin clockwise or anticlockwise; and can interfere with one-another.

The interference of the vibrating patterns can be described in terms of frequency, wavelength, masses and forces. The concept of mass and force is related to interference of vibrations. Regarding the question: what propels the U.R to vibrate ? We can only say that U.R is free to vibrate or not to vibrate: so both the states may always be present. Because of the subjective aspect of 'Consciousness' present in the U.R , these vibrations may be subjectively felt by the U.R as its thoughts and imagination. And depending upon the density or complexity of vibrations, the U.R may be experiencing different states like: waking, dreaming and deep-sleep state. Matter appears to be dead and inert to us, because the U.R within it may be in the deep sleep state.

In fact, the president of India, Dr. Sarwapally Radhakrishnan has stated in his writing titled : "Reign of Religion in Contemporary Philosophy" that: "The Ultimate Reality sleeps in a rock, dreams in a plant, and wakes-up in human being."

According to the Nobel Laureate bio-chemist, Prof. George Wald: “ Mind, rather than emerging as a late product in evolution, may be present always as a complementary aspect of all matter.” Ref.3. (By the word ‘Mind’ the professor means the ‘quality or ability to be subjectively aware’ and not the complex processing like cognition and thinking.)

#### **4. Conclusion:**

All the five Upanishads suggest that the most fundamental substance of the universe is not only physically real, but it is also capable of being aware of itself. This fundamental real substance is eternally ever-present in time and all-pervading in space. The fundamental particles of ‘matter’ are different patterns of vibrations or fluctuations of it. Depending upon the complexity of vibrations these patterns-of-vibrations subjectively feel them either in waking, dreaming or deep-sleep state.

#### **References :**

1. Tank Hasmukh K: “ On the nature of consciousness , space and the Cosmic Consciousness” Scientific GOD Journal , December 2013, Vol.4, Issue 9 pp. 753-758 (Appendix\*)  
<http://scigod.com/index.php/sgj/article/viewFile/290/335>
2. Tank Hasmukh K: “ On the emergence of physical world from the Ultimate Reality” <http://vixra.org/pdf/1312.0084v1.pdf>
3. Wald, George, Key-Note-Address published in the souvenir of the World Congress for the Synthesis of Science and Religion, Juhu Mumbai. 1998.

#### **Appendix:**

### **\*On the Nature of Consciousness, Space, and GOD**

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**Abstract:** Firstly, the physics involved in our subjective experience of ‘mind’ and ‘consciousness’ is discussed; and then its similarity with the nature of ‘space’ is pointed out,

based on the transmission of electromagnetic waves. From this similarity, a possibility of universality of ‘consciousness’ is inferred.

### **Introduction:**

How exactly the large conglomeration of atoms, called DNA and RNA molecules, got formed; and self-replicating, conscious living-beings got evolved? (ii) What is ‘mind’, and what is ‘consciousness’; and how they can be understood in terms of physics and chemistry? Such questions are going to be the most interesting topics of research in this 21<sup>st</sup> century. It is intended here to present a preliminary discussion on these subjects, so that the minds of expert scientists get triggered to find accurate answers to these questions.

Firstly, we will divide the total reality into two aspects: (i) the ‘subjective’ aspect which can be subjectively felt and experienced, but can not be objectively shown and demonstrated; and (ii) the ‘objective’ aspect, which can be weighed and measured; and can be subjected to scientific experiments. Then we will try to establish certain correlations between these two aspects. And finally, we will draw some inferences on a possibility of presence of ‘subjective aspect’ where we are unable to feel them directly. Based on this discussion we will arrive at a hypothesis that ‘consciousness’ may be present even in the ‘space’; and so, ‘consciousness’ may be a universal entity, not just limited to our brains and ‘minds’.

### **The Hypothesis:**

All of us are very much sure about the fact that each one of us is a conscious living being; and our ‘consciousness’ has something to do with our brains. We also know that when a neuro-surgeon opens a human brain, he is able to find only a large network of interconnected neurons. These neurons get electrically charged by a mechanism called ‘sodium-pump’, operated by the energy from our food; and they generate a sequence of electrical-discharge-pulses, whenever they come in contact with the sense-objects like: sound, touch, vision, taste and odor. The neuro-surgeons are not able to objectively see any ‘mind’ or ‘consciousness’ in the brain. From this observation we find that: where we are perfectly sure about the presence of subjective aspects called ‘mind’ and ‘consciousness’, what we are able to objectively see is only a large, interconnected network of neurons. A particular subjective experience of ‘mind’ may be related to a particular neuronal-discharge-sequence, but what exactly is ‘mind’ and ‘consciousness’? To seek answers to these questions, let us consider the following:

Human brain contains around  $10^{10}$  neurons. Each neuron is electrically charged at about 70 milli-volts as shown in fig.1. Now, if we could connect all the neurons in a series, then they can develop 700 mega-volts of e.m.f. And if we can connect all the neurons in parallel, and assume that each neuron can deliver just one micro-ampere of current, then also human-brain can deliver 700 000 Amperes of current. Human-brain is equivalent to a 700 watt electric-lamp. But when we try to measure the potential-difference between any two points of brain, the electro-encephalogram measures only a few micro-volts. It is so, because the neurons are comparable with electrically-charged-capacitors, as shown in fig.1a-b, which are electrically-connected as shown in the fig.2. The compact packaging of the brain seem to produce a ‘mutually-balancing-electric-field’, as shown in fig.3.

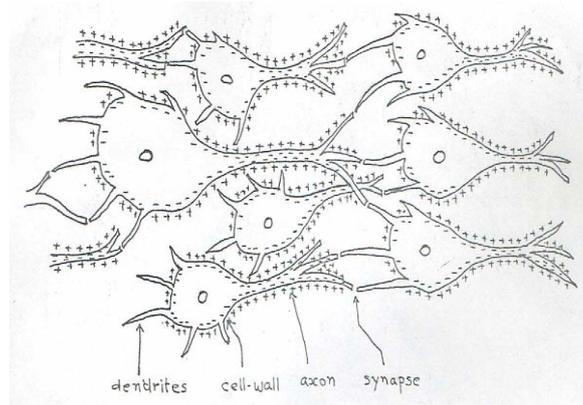


Fig.1(a): A diagram, representing electrically charged neurons. Excitatory and inhibitory neurotransmitters enter the cell through dendrites; and when the in-put of neurotransmitters crosses a threshold-level, the cell electrically discharges, and that discharge-wave travels towards the ends of axon. These ends, in turn, release neurotransmitters in the synaptic-junction, and enter the neighboring neuron.

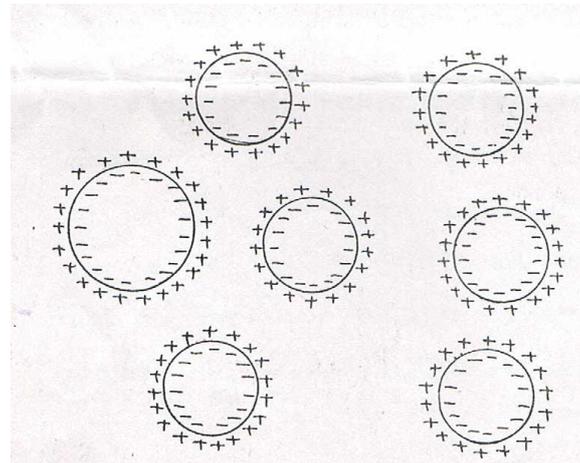


Fig.1(b): From the view-point of electrostatics, the arrangement of neurons, shown in fig.1(a) is equivalent to electrically-charged capacitors, shown here.

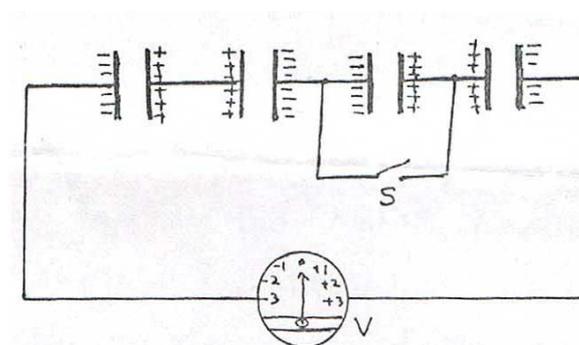


Fig.2: Four electrically-charged capacitors are so connected that the volt-meter reads zero volts. When the switch S is closed, the mutually-balancing-electric-field gets disturbed; and the volt-meter reads voltages equal to the amount of imbalance.

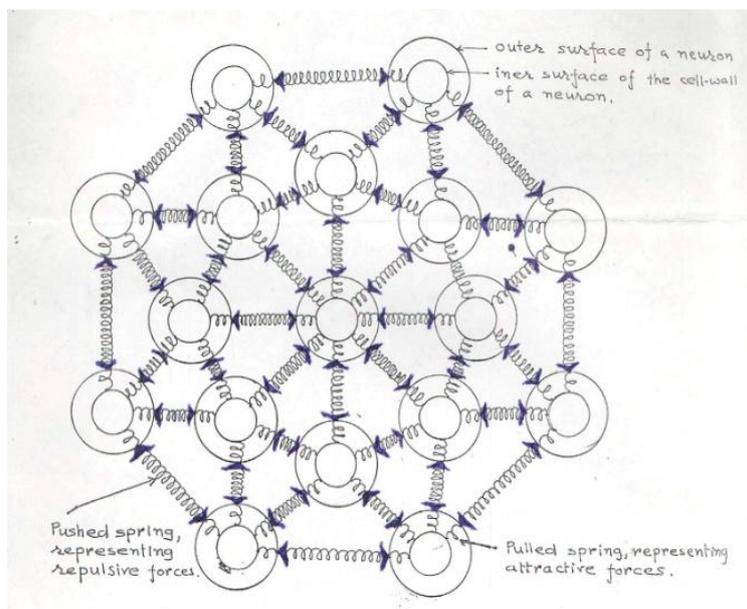


Fig.3: A diagram representing mutually-balancing electrostatic-field of the whole brain. Each and every spherical-capacitor of the figure-1(b) is being pushed apart by the neighboring neurons, as shown here by pushed springs; giving rise to a balanced electrostatic-field. When some of the neurons get discharged, the balance of the 'whole' brain gets disturbed. Separate chains of neuronal-discharge-sequence, contribute to disturb the balance of the whole brain, thus connecting different subjective-experiences.

We are sure that this large collection of neurons has a subjective aspect called 'mind' and 'consciousness'. Now, supposing we emulate an equally large collection of electrically chargeable spherical capacitors, which can sequentially discharged by photo-cells, pressure-gauges, thermistors, smoke-detectors...etc; and get re-charged by current-sources connected to each one of them; and supposing further that 'mind' and 'consciousness' is an electromagnetic process, related to electromagnetic-field of the whole brain, then we can expect a similar subjective experience of 'mind' and 'consciousness' which may be subjectively felt by the emulator built by us. As far as our objective observation is concerned, there is not much difference between the human-brain and the emulated-brain built by us; because both of them generate a sequence of electrical discharge pulses whenever some audio-visual stimulus is applied; and both of them can get re-charged. Theoretically, such a simulator can be built so perfectly, that the electro-encephalogram patterns (EEG-pattern) generated by human-brain and the emulated-brain in response to a given stimulus are exactly the same. By incorporating long-term-memory and out-put-transducers the emulated-brain may even be able to speak: "O, it is very cold today!" If we get such a response from the emulator, then we can draw a scientifically acceptable inference that our subjective experiences of 'mind' and 'consciousness' are collective processes of electrostatic-fields due to charge and discharge activities of neurons.

Now, let us concentrate on the nature of electromagnetic waves, and true nature of 'space' emerging from our discussion. We know that in the case of water-waves, particles of water do not travel physically. Only the activity of up and down motion of water-molecules gets spread in the direction of propagation of the wave. Water-waves get generated due to the flow of water towards the space created by the down motion of neighboring water. Similarly, in the case of 'electromagnetic waves', they are the oscillations of electric-field which induce

oscillations in the neighboring space. From this discussion it is clear that the so-called ‘empty-space’ is not really empty. Space must be an equilibrium-state of positive and negative electrostatic fields, then-alone a particular point in space can become electrically positive or negative without transport of any physical thing. In this physical world, there is nothing other than such activity of waves. The so-called ‘particles’ of ‘matter’ are nothing more than ‘standing-wave-patterns’ of the above-mentioned waves.

The reader must have already noticed a similarity between the electrostatic equilibrium generated in the human brain due to the large collection of electricity charged neurons; and the electrostatic equilibrium of ‘space’, because of which transmission of electromagnetic waves becomes possible, without any physical transportation. Both, empty-space as well, as human brain, experience electrostatic disturbances; our brain due to the transmission of neuronal discharge sequence; and ‘space’ due to the electromagnetic waves. Since we have a direct subjective experience of our thoughts and feelings, perfectly correlated with the neuronal discharge sequences in our brains, it will not be illogical to infer that the ‘space’ also must be experiencing some kind of subjective feeling whenever electromagnetic-waves pass through it.

Empty space is a three-dimensional, electrically balanced “screen” or an ‘arena’ which gets modified during the propagation of electromagnetic waves. As we discussed earlier, human brain is a crude version of ‘space’; and neuronal discharge sequences generated in it are crude, band-limited representations of the external world; whereas external physical world is a multi-dimensional pattern of full-band of waves. From this discussion it should not be difficult to imagine how crude must be our mental version of the world than the actual physical world; and how crude must be our personal version of ‘consciousness’ from the Cosmic Consciousness.

### **Summary:**

We first discussed the physics involved in our subjective experiences of ‘mind’ and ‘consciousness’; and then, from the study of propagation of electrostatic disturbances, found a similarity between the ‘brain’ and ‘empty space’. This similarity led us to infer a possibility of presence of ‘subjective aspect’ in the ‘space’. The ‘omni-present GOD’ referred in religious literatures, may be scientifically understandable as follows. Empty-looking ‘space’ is not really empty; the ultimately-real, most-fundamental-reality is present everywhere in space. This ultimate reality can be visualized as ‘mutually-balancing-electrostatic-field’ which is subjectively aware of its own existence; and whenever electromagnetic-waves, or ‘matter-waves’ pass through it, it is able to subjectively ‘feel’ the passage of the waves. Since this ultimate-reality is subjectively aware of its own existence, and is able to perceive the waves passing through it, we should use the word ‘He’ in stead of ‘it’ for the Ultimate-Reality.

### **Discussion:**

Our conclusion is in agreement with the statements found in ancient spiritual scriptures, e.g. In the Yoga Vashishtha Maha-Ramayana, the Guru Vashishtha explains to the Prince Rama:

“This physical-world is a play of waves, arisen in the nectar-ocean of all-pervading pure ‘consciousness’; and it (the physical-world) also subsides in that ocean alone” [2].

An eighteenth-century mathematician William Clifford had uttered these prophetic words:

“A piece of ‘matter’ is nothing but ‘curvature of space’, subject (possibly) to fluctuations in the manner of waves” [3];

According to the Nobel Laureate biochemist, Prof. George Wald, [4]:

“Mind, rather than emerging as a late product in evolution, may be present always as a complimentary aspect of all matter”.

(And it was my great pleasure to find from Google-search for H. K. Tank, that one of my manuscripts is stored in Box No. 62 of Prof. Wald’s collection of papers at Harvard University!)

### **References:**

1. Tank, H. K. “A hypothesis for ‘consciousness’” *Aswina- The Bulletin of Bio-medical Engg. Society*, Vol.4, January, (1988)
2. Yoga-Vashishtha Maharamayana (1500)
3. William Clifford *The Philosophical Magazine*, Vol. 4 (1896)
4. Wald George, *Souvenir published on the occasion of The World Congress for the Synthesis of Science and Religion* (1986)