

Particles and interactions in Shrii P.R. Sarkars "Four Chamber" cosmology

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Abstract

This article explores how elementary particles and interactions of the current Standard Model could emerge in the postmodern context of Shrii P.R. Sarkar's "Four Chamber" cosmology. One of the key elements in Four Chamber cosmology is the concept of "sub-waves", forming the underlying cause and hidden structure of "major" (detectible) waves. Using sub-wave interaction based geometry and visualization as a combined intuitional, mathematical and physical tool, a practical framework and useful vocabulary for further research and study are developed. It is shown that the geometrical application of sub-wave interaction yields verifiable phenomena in the fields of color and sound perception, as well as a more fundamental approach to intrinsic spin and Pauli exclusion of quantum physics. By bridging the abstract concepts with the dimensional world, this approach can help unpack and expand Shrii Sarkar's new line of thinking on cosmology so that it may offer practical solutions for society which have so far not been provided by modern physics.

Keywords: P.R. Sarkar, microvita, intrinsic spin, Pauli exclusion, Dirac spinor, subwaves, subspace, primary colors, vowels, formants.

In Shrii P.R. Sarkar's new line of thinking about life and cosmology, microvita and energy are primordial Faculties of creation and both appear to be different aspects or direct expressions of "Purusa", in other words, of the Universal Entity (Fig. 1). In a truly creational setting, the style of interaction is most likely infinitely more complex, rich and interesting than for example a plain differentiation or polarization. Vice versa, if the nature of the field of interaction is better understood, this may shed more light on the true nature of the primordial Faculties themselves as well, opening up a new field of study and application.

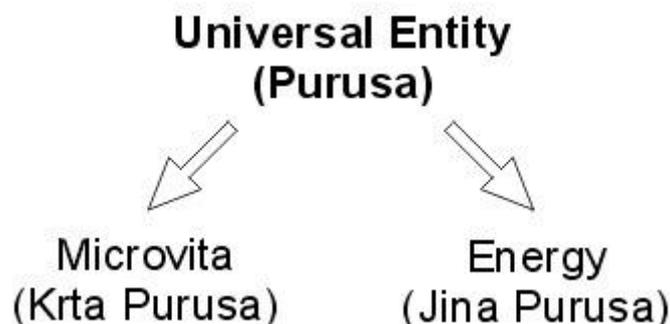


Fig. 1 - Microvita and Energy as two imminent aspects of the Universal Entity

Some interesting clues were given by S.K. Verma, while discussing characteristics of microvita¹. For example, "*Microvita [are] intelligent organizers of energy*", and "*If the spirally moving microvita turned*

into a curve and close upon themselves and continue to circulate their energies in a closed form then that entity created would be a particle". These could turn out to be crucial notions, unknown in physics today.

While addressing the core operative principle of what we might call the "microvita-energy field" (MEF), Sarkar used the term "bifurcation" ("forking in two"). The principle of bifurcation applied reciprocally, implies a non-commutative interaction among internal Faculties of the MEF. In other words, the influence from A (energy) on B (microvita) must be a different one than the influence of B on A. This way they don't cancel each other out, so that something is created. The bifurcated or non-commutative configuration is referred to as the "Four Chambers of the Universe".

A slightly different accent is that the primordial Faculties, instead of being "readily present" within the original Purusa in a sort of philosophical sense, are in fact emerging effects within the MEF, and cannot be seen independent from it (Fig. 2). Since the Faculties nevertheless appear to be aspects or forms of Purusa, the difference between the MEF and Purusa, that is, the Universal Entity, must be extra-ordinarily delicate.

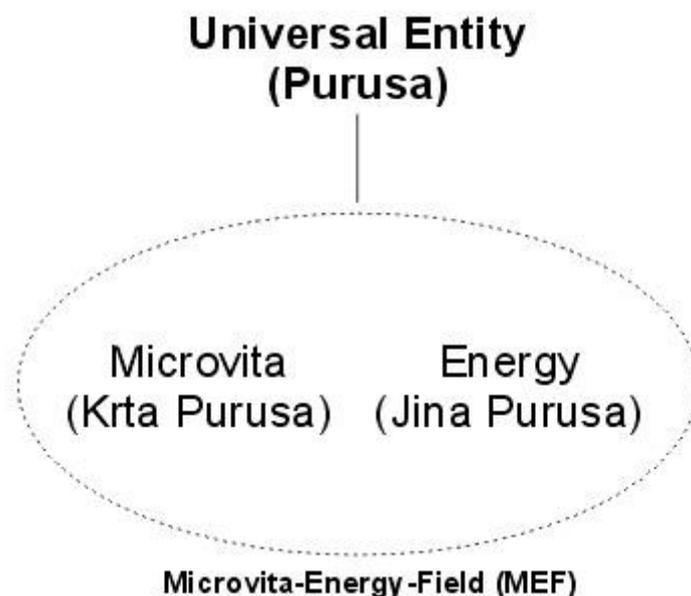


Fig. 2 - The primordial Faculties in the form of emerging (sub-wave) field effects

In order to make the MEF a physical reality, physical dimensions need to be introduced, and this is where the "spiro" (spiral, helical, etc..) movements mentioned by S.K. Verma come in the picture. Some form of composite spiral entity then would, in one way or another, account for the emerging of detectible particles, that is bosons (force carriers) and fermions (matter particles). This we will now explore in more detail, using Sarkar's concept of sub-waves.

Without going into the deeper technicalities, it is proposed that each of the "Four Chambers" of the (bifurcated) MEF characterizes a unique type of sub-wave discipline which is capable of deploying its own medium. In order to transport these highly abstract sub-wave interactions and media into the material world, a dimensional mode or stance must exist that nevertheless remains true to its abstract bearing. The relation between the abstract and dimensional stance would essentially be a-

causal, in other words, they are two sides of the same paper. The dimensional mode or stance is nothing but the bifurcated abstract field, but now in the form of a spiral, helical, etc. path into creation. Or vice versa, the proposed spiral path is in fact a dimensional representation of the imminent Faculties of the primordial medium.

The plain logarithmic spiral, having no objective beginning or end, represents a radial action reflected by an angular rotation (Fig. 3):

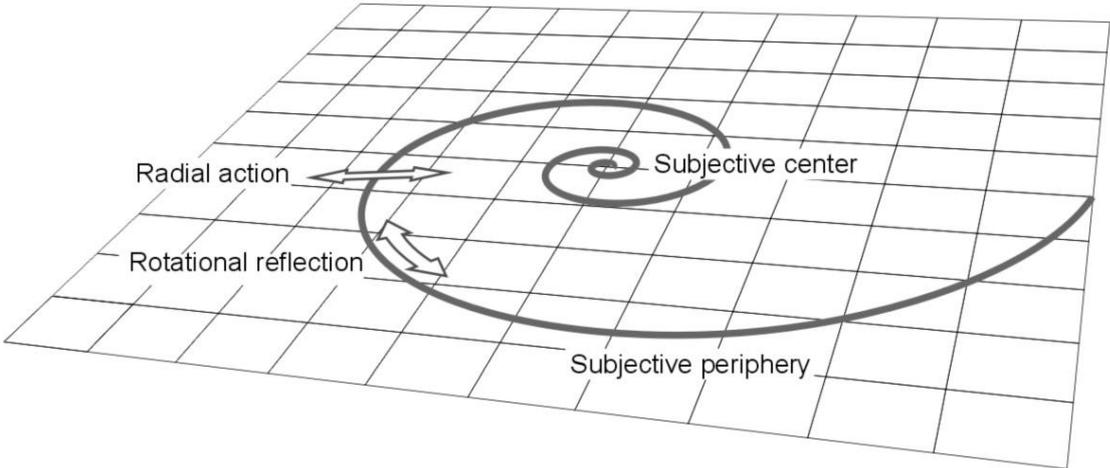


Fig. 3 - Subspace vortex primitive or primary kernel (SSV-A)

The evolving spiral at this point may be considered a still purely axiomatic path into (physical) creation, that is, the primordial flow of auto-genesis. Especially if the beginning and end of the drawn spiral are kept out of sight, it is impossible to tell whether it is rotating, or contracting (resp. expanding) or both. Anticipating its application in the dimensional MEF, this could be seen as a simple geometrical or mathematical analogy of the primitive, non-bifurcated state.

As a flat spiral alone is not enough to constitute the 3 dimensions of physical reality, a secondary spiral path is added, perpendicularly superposed upon the primary. The combined creation path forms a novel, torus-like (mathematical) structure with certain unique properties and applications. In a dynamical sense, the resulting dual- or bi-spiral is synchronized if the combined path converges in the center (Fig. 4).

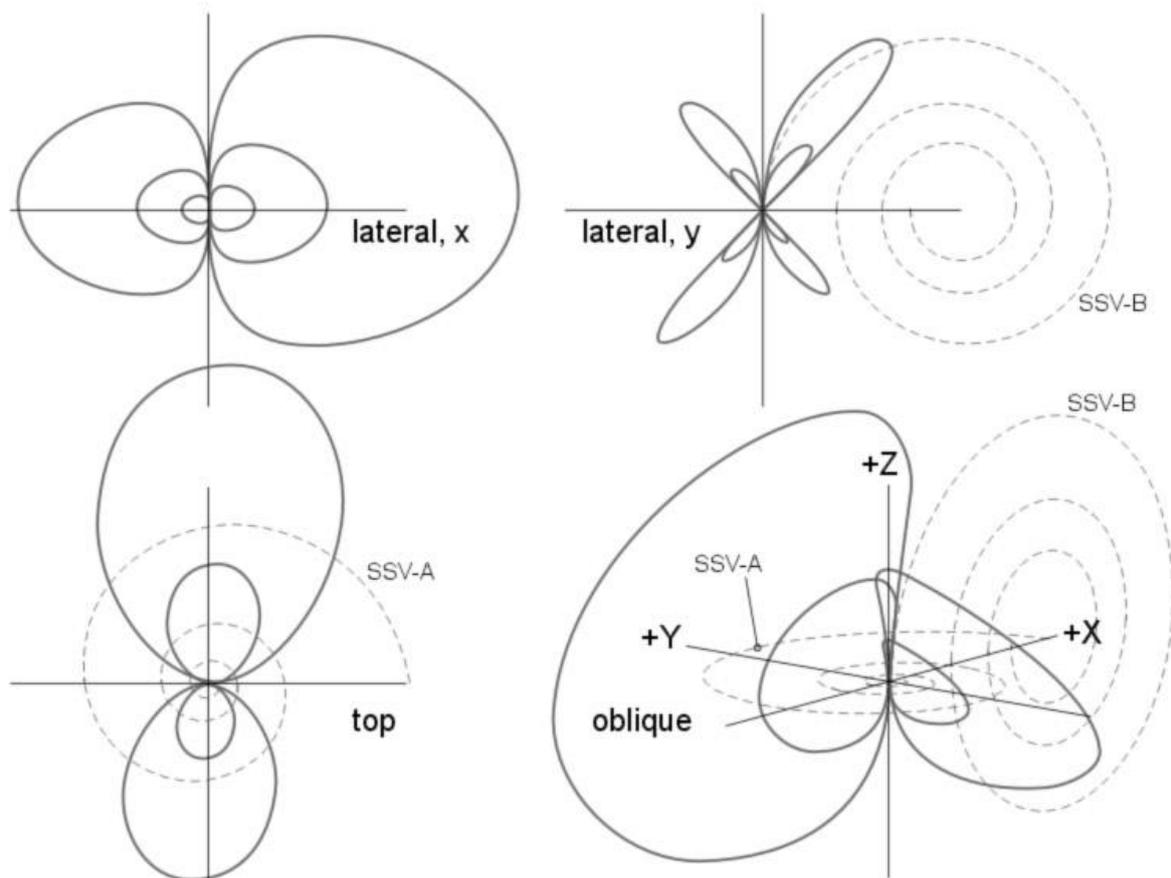


Fig. 4 - Synchronized Subspace Vortex (SSV), showing a single Universal Centripetal Geodesic (UCG)

This way $2 + 2 = 4$ functional dimensions have been formed, that is, 3 physical dimensions + the composite, synchronized MEF trajectory. Whereas the latter represents the - now bifurcated - primordial creative flow, nothing actual has been created yet. The primordial medium is referred to by Sarkar as *Bhavastha*², and in terms of sub-wave physics, it may be called "sub-stratum" or "subspace". Therefore, the composite spiral may be referred to as a "Synchronized Subspace Vortex" (SSV), representing the still somewhat theoretical, intermediary phase in the transformation from abstract to matter. The constituent spirals of the SSV are referred to as the primary and secondary primitive or kernel (SSV-A, SSV-B). Reflecting the original sub-wave style of interaction, the angular speed and therefore the compression is accelerating towards the centre (Fig. 5). Therefore, the sub-wave vortex represents the pure principle of centripetal synchronization, and a single bi-spiral trajectory is called a universal centripetal geodesic (UCG).

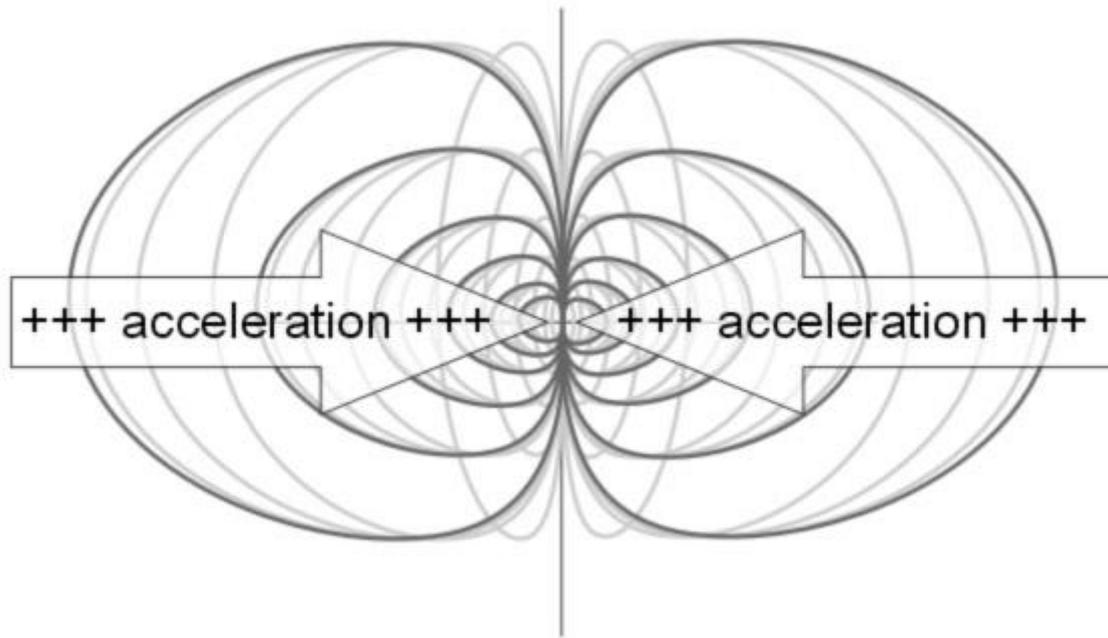


Fig. 5 - Adding more geodesics (UCG's) gives the subspace vortex its typical shape

S.K. Verma made an important intuitional leap, suggesting essentially that an ensemble of "*microvita in a spiro movement turn upon themselves, creating a closed form, thus constituting a particle*"¹. Along the same line one might relatively easily extrapolate this to revolutionary solutions in quantum physics, such as in the case of quantum entanglement or the double-slit experiment. However, when it comes to the creation of particles within the MEF, we must also take into account external interactions, just like in quantum physics. In other words, the original Bhavastha essentially remains unblemished as long as there is no actual interaction, for example in the form of sensory perception or measurement. The moment an external interaction occurs, such as the absorption or emission of a photon, the sub-stratum is activated - that is, the MEF actually bifurcates, and at that point microvita and energy get expressed within their respective media.

From that point on, bosonic and fermionic effects can be discerned, provided there is an active medium. Earlier research suggests that what we know as "boson" (force carrier) is the direct interaction between the subspace vortex and the "planes of inferences" resp. the "psychic worlds" (Fig. 6)⁴. The latter were introduced by Sarkar², referring to immediate reciprocities among the Four Chambers. The "planes of inferences" refers to the medium created through the subjective synthesis of the (A) subjective chamber (energy) out of the (B) objective chamber (objectified microvita = generic essence or vibration). In other words, through subtle, or universal control or attraction, the (semblance of a) physical medium is lifted out of the abstract sea of vibration. The photon (boson) then constitutes the interaction of the subspace vortex with that synthetic physical medium. Likewise, another type of boson constitutes the interaction between the subspace vortex and the (B) subjective - (A) objective medium, that is, the psychic worlds. The latter is hypothesized to be the Higgs boson. Within Four Chamber cosmology, the planes of inferences and the psychic worlds, in which different aspects of the central vortex are being expressed, could be referred to as the (A) resp. (B) synthetic "gauging media".

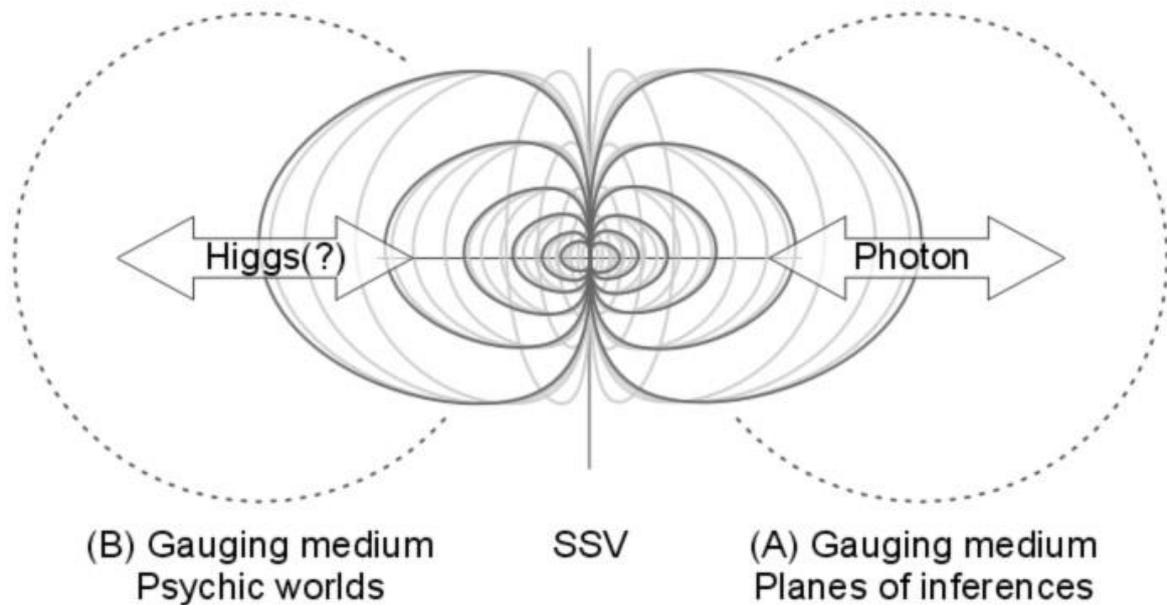


Fig. 6 - The subspace vortex' interactions with the gauging media
 (note: the fields are drawn separately only for clarity - both pervade subspace)

Fermions are the central massive effect raised within the Four Chambers-boson-vortex constellation. If the fermionic mass becomes entirely self-controlled (phil. "Swayambhu Iyunga"), this constitutes the nucleus. Specialized research needs to be done - intuitively, analytically and in the lab.

Besides serving as a context and working model for particle creation and interactions, the sub-wave approach also provides at least an acceptable visualization of the so called Pauli exclusion principle of quantum physics (Fig. 7) ⁴. Not only was this never achieved before, it might turn out that it actually has the potential to help adequately explain said phenomena. Pauli exclusion is the key to atom architecture but its true cause is yet unknown. Probably Pauli exclusion could be seen as the tell tale signature of causal bifurcation, in the physical plane.

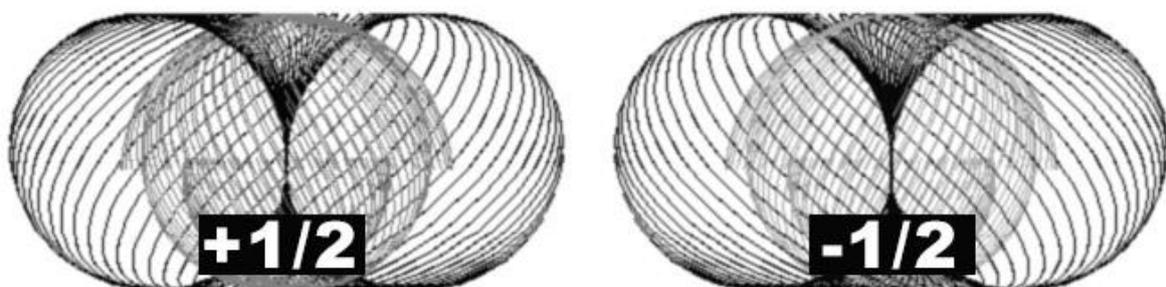


Fig. 7 - Fermionic spins in the sub-wave vortex. Only two opposite spins can co-exist in a single SCT.

The immediate context of Pauli Exclusion is spin. Hence, in Four Chamber cosmology, the SSV-A (primary SSV spiral or kernel) corresponds to the earlier Pauli spin representation, and the complete SSV "bi-spiral" subspace vortex, capable of visualizing Pauli exclusion, to the relativistic Dirac "bi-

spinor" (Fig. 8). A phase shift of the SSV-A primary kernel of not 180° but 360° inverts the spin, and corresponds to a half bi-spinor rotation.

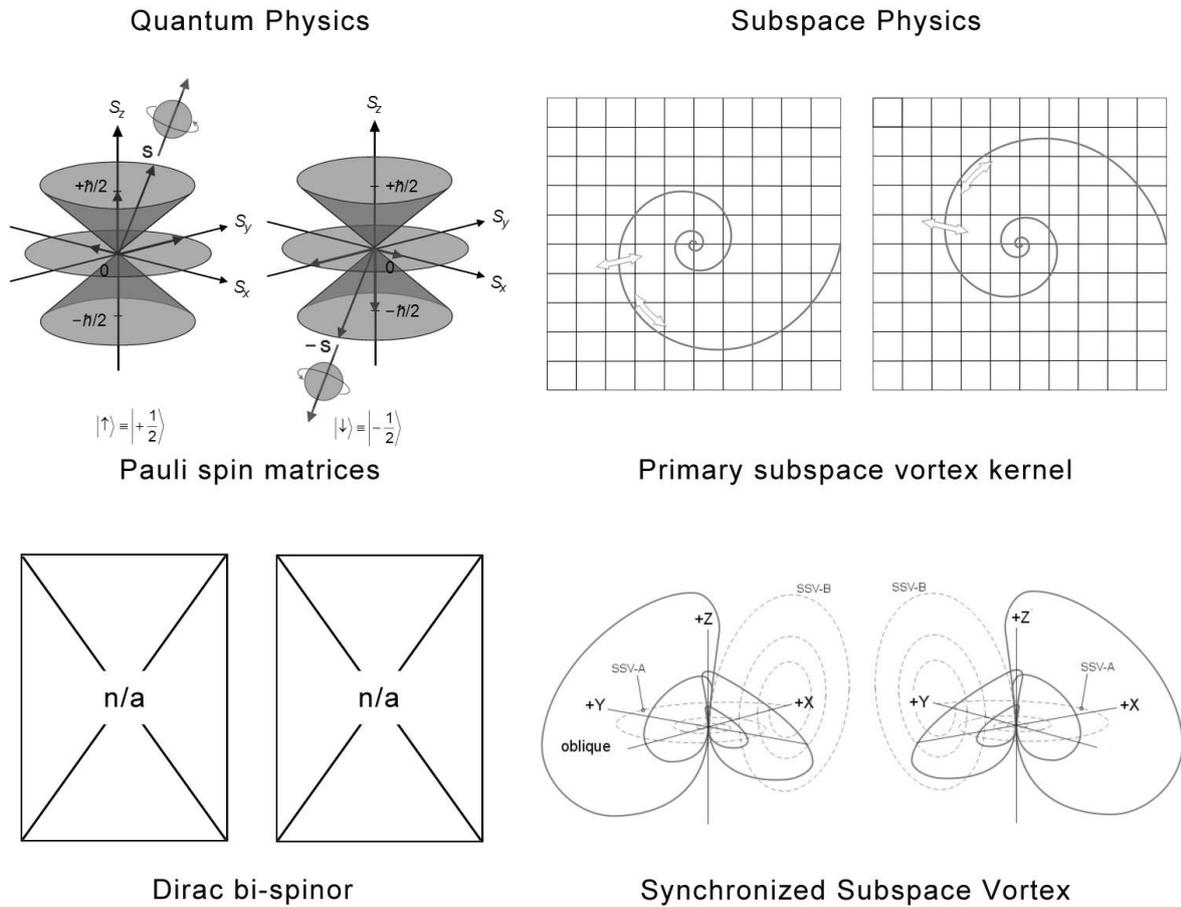


Fig. 8 - Visualizing classical and modern spin in quantum physics and subspace physics

A special case of subspace physics is the geometric origin of color⁵. The centripetally synchronized MEF subspace vortex (SSV) translates an actional component provided by the secondary (SSV-B) kernel, into a reflective component of the primary (SSV-A)(Fig. 9). This results, by $E = hv$, into a specific wavelength. Within the subspace vortex, in the plane of reflection, the energy has an angular aspect. At the same time, because of the conditioning presence of the vortex, the abstract, dimensionless sub-wave structure of the original medium (Bhavastha) gets projected or proportioned in 3 dimensions directly, "warped" as it were, which could be seen as a "non-gauging" or weak geometrizing effect. The resulting medium may be referred to as weakly geometrized subspace (WGS-A, WGS-B). If the gauged energy matches certain differential angles of the (non-gauging) WGS receptacle, the photon's characteristic bearing is somewhat augmented, and this we perceive as a primary color. This way, the wavelengths of the primary colors as well as the retinal peak sensitivity can be accurately predicted.

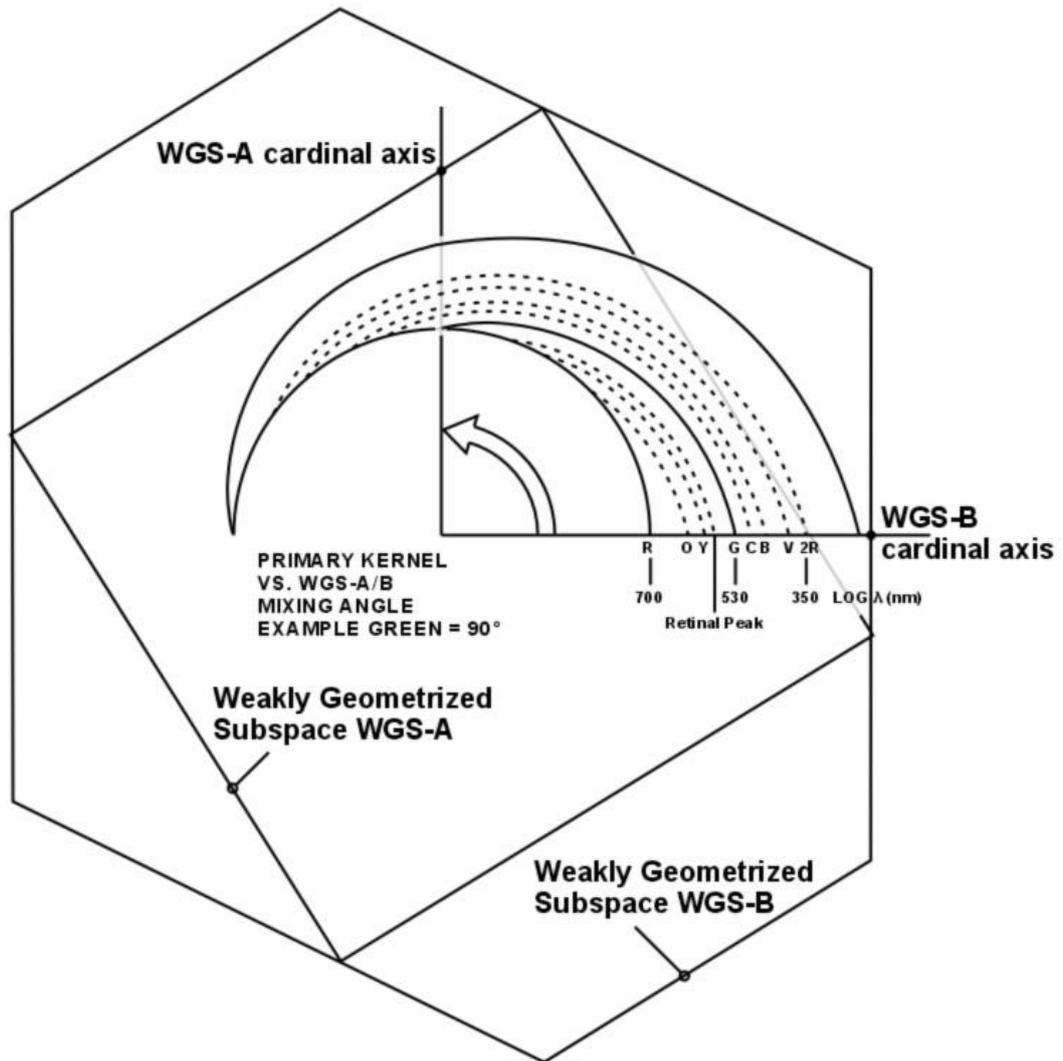


Fig. 9 - "The Colors of Creation" - simplified principle of subspace color generation

This additional photon effect relating to the planes of inferences could be referred to as (A) non-gauging interaction. Similarly, a (B) non-gauging interaction could be hypothesized, relating to the (B) gauging medium or psychic worlds, which might help identify different categories of (positive) microvita. It is proposed that the combined (A) and (B) weak- or non-gauging interactions are responsible for the subtler processes of life.

The emerging of electrons in subspace results from another type of synchronization. An integral spin added to the SSV-A kernel, relative to an ("external") inertial frame, combines with the whole vortex into a single, frictionless (and therefore lossless or super-conductive) topology or shell (Fig. 10). Unlike the original vortex, the latter is shaped like a classical torus, whereas the super-conductivity is geometrically defined by a closed loop or path. The latter constitutes a universal toroidal geodesic (UTG), and hence the resulting figure represents the principle of toroidal synchronization. The original vortex is now de-synchronized and effectively disappears from the stage, leaving only the synchronized torus and a self-controlled nucleus. The synchronized, super-conductive shell is detectible and may be referred to as Synchronized Charge Topology or SCT - the imprint or "after-effect" of the subspace vortex spinning in relative space. At this point we may speak of a physical

interaction. The formal, inertial frame is hooked to the still, outer ("infinite") radius of the original vortex and is still somewhat theoretical and therefore inconsequential. In actuality, the inertial frame emerges out of the abstract as "the least common multiple" so to say, that is, a consistent shared medium of a plurality of SCT's.

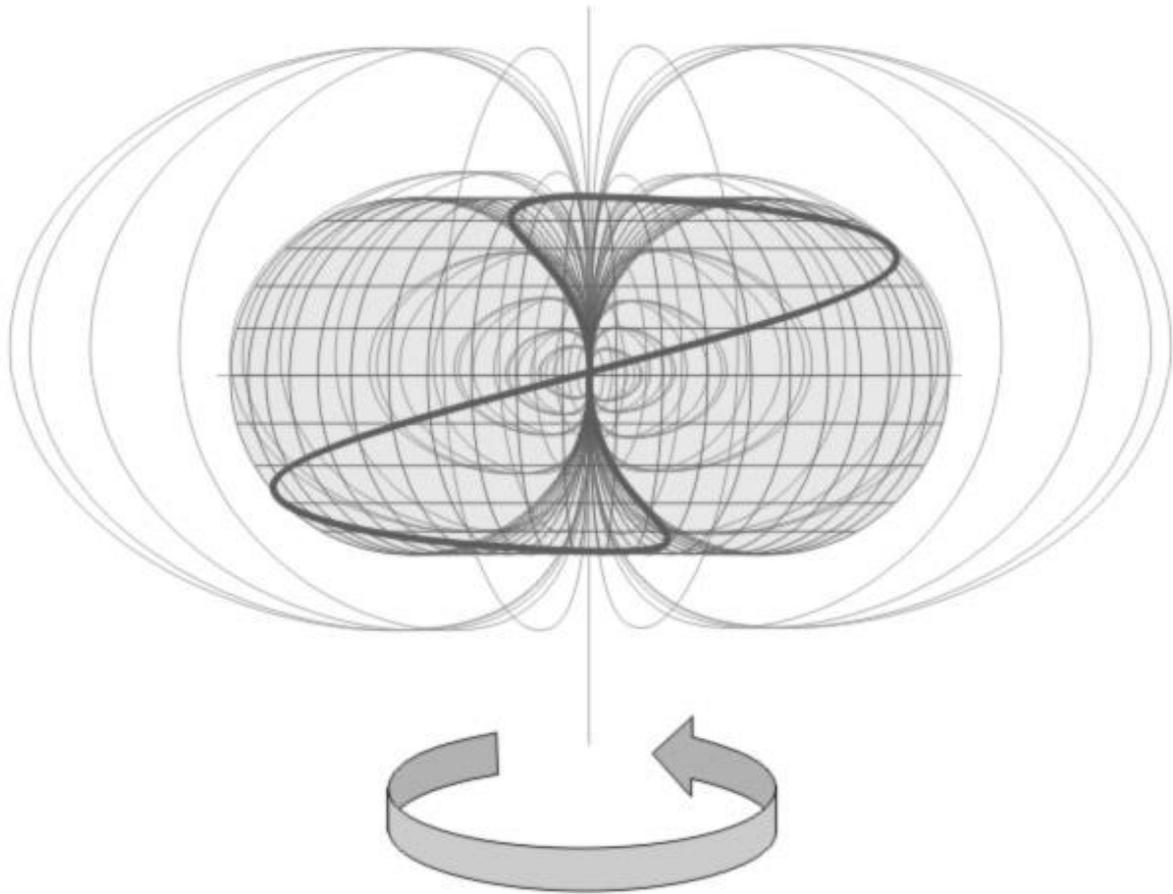


Fig. 10 - SSV Vortex drag, leaving a superconductive charge topology. One closed geodesic is shown.

Mind or pure "I" tends to fill up that space - it is the epitomized, incarnate proportionality of matter and abstract in a cohesive approach of physical density, and the result is commonly known as life. Contemplating that state, that is, the SCT (in "siddhi" style) may feel somewhat perturbing, inconclusive and spiritually in some sense objectionable, but that is exactly the point - after all it is the final, bound state (of consciousness). If the approach is authentic and progressive, there is no reason for concern.

In short, the increased rotation or "vortex drag" of the initially infinite and inconsequential SCT, reduces its radius more and more, pushing it closer and closer to the nucleus. The angular acceleration correlates to a (geodetically determined) "falling into the center", much like how matter is sucked up by a gravitational well. This is the true subspace process of the "contraction" or "crudification" in philosophy, creating different strata of "mind-filled" physical media. Again, if the causality of the contraction is known, or at least assumed, mind is the substance which fills space. If not, "mind" and other subtler faculties remain an abstract and all that can be known is a mechanical universe.

In terms of subspace interactions, spin is what ultimately bifurcates the SSV-A and SSV-B kernels, which were originally identical and, in all fairness, indiscriminate. Visualizing a "perfect" (bifurcated) SSV is in fact a bit of a tongue-in-cheek approach, because without the spin, its own 3-dimensional medium does not actually exist. In physics terms, because a change in angular velocity of the primary SSV kernel happens instantaneously, an electron jumps discontinuously from one shell to another and back. This discontinuity is decisive proof of the bifurcating sub-wave fabric of the universe.

So, similarly to how the intermediate, essentially non-dimensional (apart from the WGS) gauging media are fabricated out of different styles of sub-wave interaction (not further detailed here), the final, dimensional, physical medium is synthesized through spin. Hence, we could say that (SSV) spin is the original and characteristic bearing of physical reality. It is this causal approach of probably the most fundamental property in quantum physics which could help shed some light on the nature and origin of phenomena such as Pauli exclusion. For the sake of argument we might add that the original Purusa, that is, the Universal Entity, is synthesized entirely within and out of itself, remaining free from change and completely unblemished by its conditional states.

Subsequent modulation of the SSV-B secondary kernel of the subspace vortex yields a richer spectrum of SCT's (Fig. 11). This kind of modulation is done by Cosmic Factor, that is, microvritum directly, unknown in physics today. It might help explain for example orbital de-excitation in a better (non-probabilistic) way. It was found that the ratio of the angular and toroidal rotations of the SCT, when synchronized, corresponds to the ratio of the resonance peaks ("formants") in the vowels of human speech ⁶. As mentioned in the referred article, there is a striking similarity between how vowels are created out of the dense spectrum produced by the vocal chords, and how SCT's emerge within the boundless vibrational ocean of Bhavastha. This of course means there could be a wonderful, reciprocal elucidation and enrichment between the "Samskrta Sounds of Creation" and subspace physics, resp. Sarkar's Four Chamber cosmology. It is the subspace science of incantation, and thus of creation. Again, much research is waiting to be done in this very rich and enchanting field of "cosmic acoustics".

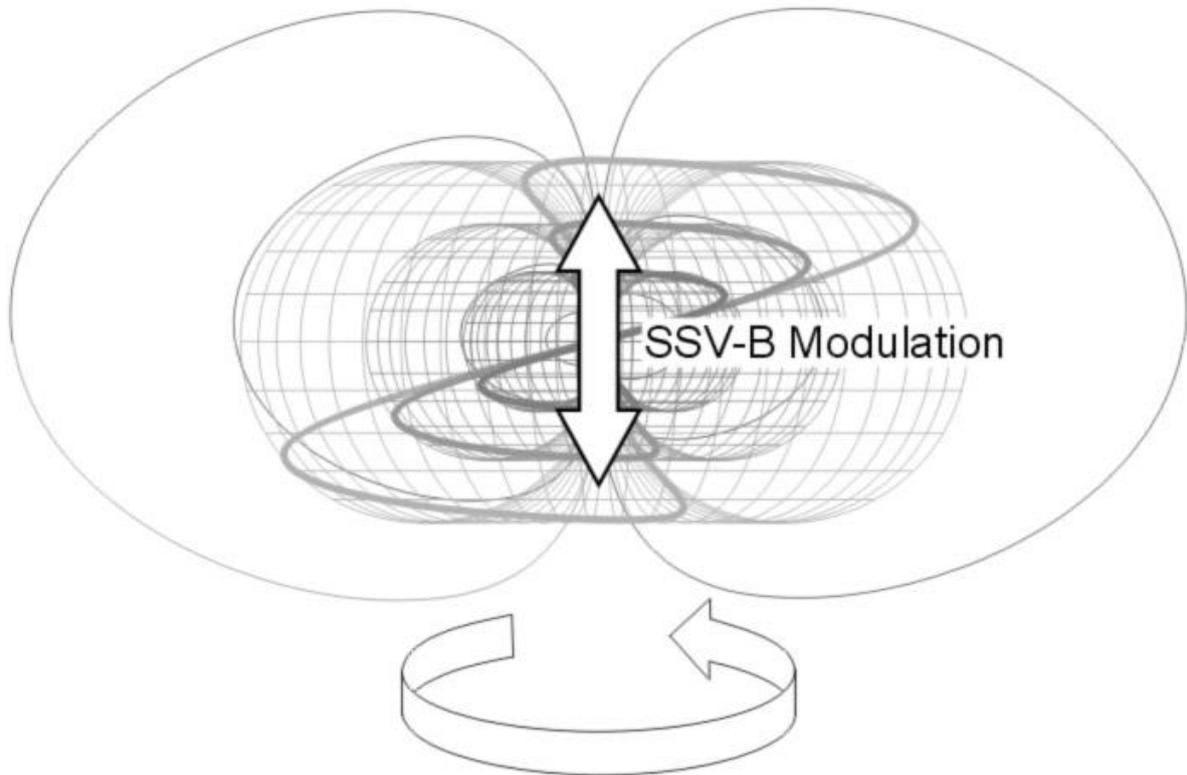


Fig. 11 - Additional (weak) modulation by the SSV-B kernel creates multiple SCT's

Summary of subspace denominations

Four Chambers and their imminent reciprocities (Sarkar):

(A) Subjective = Energy (Jina Purusa)

(B) Subjective = Microvita (Kṛta Purusa)

(A) Objective = Propensities

(B) Objective = Generic Essence (vibration)

(B) Obj. > (A) Subj. synthesis = Planes of Interferences (physical planes) = (A) Gauging medium

(A) Obj. > (B) Subj. synthesis = Psychic Worlds (forms of existence) = (B) Gauging medium

Planes of synchronization:

1. Formal stage = Bhavastha or subspace

2. Intermediate stage = centripetal synchronization through UCG / SSV

3. Final stage = toroidal synchronization through UTG / SCT, with a number of sub-divisions

Subspace entities (bridging matter and abstract):

MEF = Microvita-Energy-Field (bifurcating subspace)

SSV = Synchronized Subspace Vortex (bi-spiral, a-causal or intrinsic dimensionalization)

SSV-A, SSV-B = SSV primary resp. secondary kernel (spiral)

UCG = Universal Centripetal Geodesic (smallest, defining trace of the SSV)

SCT = Synchronized Charge Topology (torus, caused by "vortex drag")

UTG = Universal Toroidal Geodesic (smallest, defining trace of the SCT)

WGS-A, WGS-B = Weakly Geometrized Subspace ("non-gauging" interaction, "Sacred Geometry")

Particles and Interactions:

Photon = SSV - (A) Gauging interaction (+ weak, non-gauging WGS-A interaction)

Higgs (?) boson = SSV - (B) Gauging interaction (+ weak, non-gauging WGS-B interaction?)

Electron = gauged SCT

Nucleus (quark-gluon mass) = self-controlled SSV state (not further detailed here)

For those physicists who somewhat understandably frown at the purely axiomatic SSV - in the end it is completely canceled out of the equation while still leaving a deeper causal framework for particles and interactions upright. But in order to say something new for example about spin and Pauli exclusion, something along the line of the SSV is unavoidable.

Another interesting aspect is the subtle definition of matter in Four Chamber cosmology. The "I" that fills the planes of inferences becomes the "Known" portion - hence matter is "Known I" in the planes of inferences. Likewise, the "I" in the psychic planes becomes the "Done" portion, and this is propensities, etc.. It suggests that in Four Chamber cosmology, the concept of matter is primarily boson-based, rather than fermionic.

Conclusion

None of the phenomena described above is real in a classical sense. The fundamental operative principle in subspace physics is obviously rotation. Rotation is nothing but the dimensional form of abstract sub-wave interactions, which are only non-trivial if they can become synchronized. The latter is also the heart of Four Chamber cosmology, but this is not discussed in further detail here. Hence, the only real thing is the (proposed) inner consistency of the approach as a whole - intuitively, analytically or mathematically, and in terms of physics. This inner consistency is known in philosophy as "svabhava" - the characteristic bearing of Consciousness. Realizing this, is the "tayoh siddhi", that is, proof through extra-ordinary perception, of subspace physics and, proposedly, of Shrii Sarkars' Four Chamber cosmology. It is not a science of readily existing observables.

Without this "consummate perspective", the entire field is trivial, and we will forever be stuck in a mechanical universe with some "weird" quantum properties the cause of which is not understood.

Summarizing, through an abstract-axiomatic-physical line of thinking, justified and bound together through the process of "siddhi" in the field of knowing, a working hypothesis and model are proposed adding a level of causality to elementary particles and other quantum effects and their respective subtle and physical media beyond mainstream thinking.

The theory of sub-wave physics and the subspace vortex cannot be tested (and thus falsified) in a textbook, purely "objective" empirical style, because empiricism itself is a subset of the phenomena under investigation. However it can be tested on its inner consistency, and this inner consistency has an intuitional, an analytical and a physical aspect. We might call it subtle empiricism - the empiricism of svabhava. The ultimate test however is not a matter of acquiescence - is a matter of solving

certain problems in a nice way, so that society can move forward, toward a new and exciting chapter of civilization.

"I think, by dint of our spiritual sadhana, rather our physico-psycho-spiritual sadhana, our minds will develop in all [their] strata, and the power of conception, the power of conceiving, will also develop, and with that developed conceiving power, we will know all the secrets of these microvita". Shrii P.R. Sarkar

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