

Identifying fundamental problems in Physics – II

Lack of a Comprehensive and Consistent Field Theory cont....

Sunil Thakur

Sunil.thakur@norlabs.org

www.norlabs.org

The model of space as proposed by Einstein allows for existence of two extreme structures – two particles may form two distinct fields independent of each other, since one set of particles have more mass and less volume therefore one field is bound to have very high density, and another field must have very low mass and huge volume. The second extreme structure has these particles distributed evenly at all the coordinates of space or in other words when universe is in a supersymmetrical state. This is the kind of situation second law of thermodynamics envisages at the absolute zero temperature. We see a glimpse of both these structures in the form of black holes and voids.

The second state is the state of supersymmetry. In supersymmetrical space, density variations do not exist and hence there is nothing to be observed nor is there any observer. This structure is the absolute space. Einstein does not rule out the possibility of existence of absolute space but absolute space is absolute because there are no density variations and therefore there are no objects in the universe. The universe is like a zero; zero is not a value-less entity and yet it does not have any value. The absolute space is absolutely dark and cold place. In absolute space, everything is in perfect balance.

As suggested by Einstein himself, the model of space proposed by him does not have any place for singularity.

Einstein's definition of the matter is quite simple, matter or a particle is a spacetime structure. We know that space has energy, volume, and mass and therefore matter in any form must have these three components. Einstein's definition of matter is not very different from the popular definition of the matter which defines is something that has mass and volume.

How else can one define the basic, the fundamental entity of the universe? The only properties it exhibits is that it has energy, mass, and volume. Unfortunately, we believe that fundamental particles of the universe can be massless entities and yet have energy and volume and in singularity, matter can have mass and energy without having any volume.

Mass is not the form but mass gives form to an entity. Mass is the very essence of a physical entity; without mass, a physical entity cannot have energy, and volume and without mass it cannot have observable properties and therefore can only be thought of as

an imaginary entity. Physics can explain illusions; it cannot explain an idea emerging out of pure imagination.

It is the mass that occupies space and Einstein has conclusively proved that energy has mass therefore the idea of existence of massless particles, whether it is a photon or the fundamental particles of the universe, is scientifically untenable.

We also tend to believe that matter falling in the singularity does not have any volume as singularity is not supposed to have any volume. What can one say about such an imaginary proposal? Matter with volume falls into a singularity and loses all the volume and we are not discussing the volume of just one or two particles, we are discussing the volume of numerous stars many times bigger than our own sun. Such a loss of volume shall create huge empty spaces in the space esp. around the black holes or the other explanation can be that universe must contract to compensate the loss of the volume but we come out with diametrically opposite proposals that maximum density of matter outside the black hole is noticed around the black hole and that universe is expanding rather than contracting.

Physics is not a matter of convenience; it requires digging in, in the deepest level of thinking process when nothing else but truth is left. It requires a level of concentration when one stops hearing, seeing, smelling, and feeling touch, and forgets about even the food. I am reminded of a beautiful quote from the Patanjali Sutra,

“When you are inspired by some great purpose, some extraordinary project, all of your thoughts break their bonds. Your mind transcends limitations. Your consciousness expands in every direction. You find yourself in a new and great and wonderful world. Dormant forces, faculties, and talents come alive, and you discover yourself to be a greater person by far than you ever dreamed yourself to be.”

Once such a state is achieved then truth flows effortlessly. It is a wonderful state to be in; a wonderful state when one's being merges with the truth. More often than not, truth emerges intuitively. You know it but more often than not, our conditioned mind rejects it. It tells us, aha, this is illogical, how can it be true?

If we do not reject the truth at this stage because all the knowledge that we have stuffed our mind points out in a different direction then, we start to get our answers to all our 'whys and hows'. Then, one comes out of the trance and everything becomes crystal clear and one starts getting more than one evidence that support the explanation. One wonders, how one had missed the most obvious, and most simple thing in an observed phenomenon.

You might recall several instances when you were looking for something say you hanky and before calling your wife, you make sure that it is not there but finally you have to call your wife. She comes and picks up the hanky even without looking at it and from right in

front of your eyes. Can we blame our wives for hiding the hanky? No, we cannot and we do not.

The same is the case with nature. Nature does not hide anything from us; it is just that we do not look at the truth carefully enough. When we search for the hanky our mind is stuffed with something else and when we search for the truth our mind is stuffed with everything we already seem to know, everything that we regard as truth.

When truth emerges, we realize that hanky was right in front of our eyes and wonder and even feel foolish how we were not able to see it.

This is not philosophy; this is pure science. Let us get back to our discussion on the space.

The matter appears when supersymmetry of space is violated or in other words, when density variations are created or in other words when supersymmetry of space is violated. Unfortunately, this model also does not leave any scope for any motion to exist. If absolute vacuum does not exist in the universe i.e. if a physical entity is present at all coordinates of space then we are not left with any space in the space for any motion.

Let me clarify here that so far I have not deviated from the basic proposals of general relativity and I can assure you that I will not deviate from this basic model throughout the analysis of different aspects of nature. One can see, that these are the same conclusions that Einstein has drawn about the space of the general relativity.

My first major difference with Einstein's conclusion starts here when we try and understand the concept of time. I think, Einstein's definition of time, his understanding of time may not be wrong but it is not correct either.

Space is the structure; time is the measure of change in the structure. Time is a process through which universe achieves supersymmetry in its structure. We will discuss concept of time later.

We also know that usable energy of a system constantly goes down and is converted into unusable energy making all natural processes irreversible. I think all processes are natural processes. We may initiate or terminate a process but we cannot initiate an unnatural process.

When we freeze water to form ice and then reverse the process to get back the water, we are not left with the same quantum of water that we had before we had frozen it. The loss of water may be immeasurable and therefore we may feel that we have same components of an entity that we had when at the start of the process because a part of energy is converted into unusable energy. This is what even quantum mechanics suggests.

Radiation is a form of energy and must have mass. The loss of energy released in the form of mass remains undetectable and we assume that photons are massless entities and yet can have energy.

We often suffer from Galilean illusion i.e. when change is so slow that it is undetectable, we assume that there is no change.

Everything physical in the universe is the manifestation of the space.

Second law of thermodynamics suggests that universe is moving towards achieving supersymmetry in its structure. What is the process that ensures equitable distribution of energy in the universe?

If universe has to achieve supersymmetry in its structure then it can only be through all the systems achieving supersymmetry in their structure.

The distorted space is the space in which two fundamental particles are not equal. As we have already seen, there are two complementary fields in every system (from an atom to the superclusters of galaxies) – one with more mass and another with more volume. We assume that 99% of the mass of an atom is empty but it is only as empty as any space in the solar system is. Due to extremely low mass content, it remains imperceptible to us.

We have been encountering the term ‘usable energy’ repeatedly. What is the difference between usable energy and the unusable energy? How and why the energy becomes unusable?

Energy is usable when it is convertible either into matter or radiation or if it can be exchanged with other particles or matter.

Obviously, energy becomes unusable when it is neither convertible into matter nor can it be exchanged by one entity with another entity. Unusable energy cannot be released as radiation either.

How do we account for the unusable energy in the universe? In what form does it exist?

In the next article in the series we will seek answers to these questions.
