Theory of Anything-Sankhya Philosophy

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Abstract— I am going to present a unify theory of anything, from which you can solve all the unsolved problems of universe. To understand Theory of Anything (TOA) first I will explain an old Hindu philosophy called Sankhya philosophy. Than from Sankhya Philosophy I'll try to explain all the unsolved problems of universe.

Index Terms— Theory of anything, Science and spirituality, Science and Sankhya philosophy, Science and Hinduism, Unify theory of physics, Unify theory unsealed, Theory of anything explain by Sankhya philosophy, Reason behind heisenberg uncertainty principle, uncertainty principle Explained, uncertainty principle and Sankhya philosophy, Quantum Physics and Sankhya philosophy, Elementary particles and Sankhya philosophy.

1. Introduction

I am going to present a unify theory of anything, from which you can solve all the unsolved problems of universe including physics, chemistry biology, quantum theory etc. means I am trying to show how universe works from macro to micro level and how from one theory we can prove other aspects of universe, because all the elements of universe works on very same pattern.

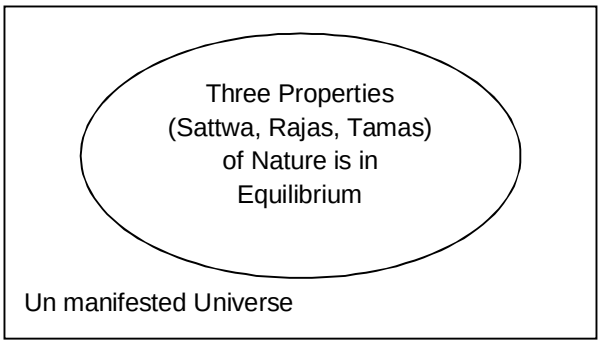
To understand TOA first we have to understand an old Hindu philosophy called Sankhya philosophy. After understand Sankhya philosophy we will discuss and try to solve all the mysteries of universe from the principles of Sankhya philosophy.

2. Sankhya Philosophy

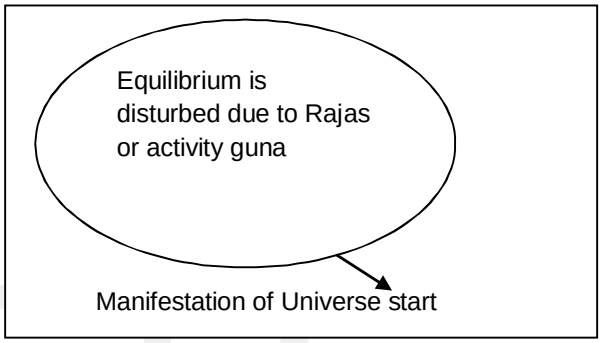
The manifested universe has the three modes (guna). It is in discriminating, objective, manifestation, activity, and restraint respectively: they mutually subdue and support each other,

There is evidently a subtle element (Sattwa), one of passion or force (Rajas), and something which is contrary to both an element of dullness or insensibility (Tamas), in all creator of universe; and these are assumed to indicate a primary difference in the constituent elements of Nature.

Nature or primordial matter is described by the gunas, which were primarily in equilibrium, and so long as this state existed there was no emanation into separate forms of matter. This state of rest was destroyed when nature began to act, though unconsciously, this movement, as motion or activity in general, is due to the influence of that guna, or constituent of Nature, which is called passion" (Rajas).



These gunas are called (1) Sattwa, truth or goodness, as light (or subtle), and enlightening (or manifesting); (2) Rajas, Properly Passion, but sometimes interpreted as



foulness as exciting and mobile; and (3) Tamas, darkness as heavy and enveloping (or obstructive,).

Or

(1) Essential (2) Impetus (the force or energy with which a body moves, something that makes a process or activity happen or happen more quickly) (3) Caligo

The first (Sattwa) however, is not more an essence than the second or third. The second, "passion, "is rather the cause of an impetus than the impetus itself, the moving force rather than the motion. The terms have, however, only a relative meaning.

Again Sattwa means primarily existence or reality, the real essence of anything and hence truth and also goodness or virtue but as by the essence of a being we imply something more subtle than the gross form, the word is used to denote that constituent or formative element of nature which is lighter and more subtle than the other two. The mode or quality of "goodness" is only, it must be remembered, a light, elastic, etherealized kind of matter, favorable to virtue, but not of a moral nature in itself.

The second (Rajas) Constituent is termed "Passion" or "Foulness," because it is the exciting element, movement.

The third, "Darkness," is the grossest of the elements.

Goodness is the most subtle of all. It is elastic, and has an enlightening or alleviating influence.

The mode called "Foulness" or "passion is the emotional element, causing work, and is the source of all pain

The mode called darkness is heavy and destructive. It is the cause of stupidity and illusion.

Every kind of existence is formed by the gunas, but an infinite variety of conditions, as the different kinds of these elements are blended together in varying degrees.

Each may subdue or support the other; they are capable of producing each other, and have a mutual existence; i.e.,

they pass into one another, or produce the effects of each in different conditions.

Modified condition is the character of the three modes, which are never for a moment stationary. This constant motion produces different effects by ever varying proportion of their action. In some species the quality of “goodness” predominates, and they are happy; in some that of passion or foulness, and they are miserable; in others “darkness” prevails and they are- insensible or indifferent.
Now to make clearer I’ll show characteristics of 3 gunas in tabular form:

Sattwa (Goodness)	Rajas (Passion)	Tamas (Darkness)
Joyous	Grievous	Stupefying
Serve for Manifestation	Serve for Activity	Serve for Restraint
Light	Foulness	Heavy
Subtle	Exciting	Enveloping
Enlightening	Mobile	Obstructive
Essential (absolutely necessary; extremely important)	Impetus (the force or energy with which a body moves, something that makes a process or activity happen or happen more quickly)	Caligo (darkness)
More an essence than the second or third	Rather the cause of an impetus than the impetus itself, The moving force rather than the motion	Grossest
Existence or Reality	Exciting element	Stability
luminousness ; this is prevalent in fire	Activity ;this predominates in air	Molia, delusion this resides in earth, which being heavy, is supposed to be formed by, and represent, the gross, stupefying element.
Elastic	Emotional element	Destructive
Etherealized kind of matter	Causing work	Cause of stupidity and illusion
Pleasure	Desire	Passivity or Indifferent
Expansion	Inspires action	Inaction and Ignorance
		Impotency, Contraction, Inertia

Representation of 3 modes or gunas to understand Theory:

Now to clearly understand suppose there are 3 human beings with following composition of 3 modes of Nature
First we will make assumptions to represent 3 gunas
Say Sattwa will represent by *, Rajas by +, and Tamas by –

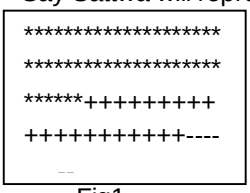


Fig1

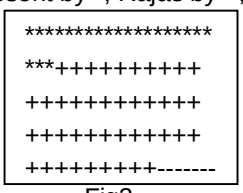


Fig2

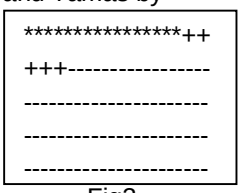
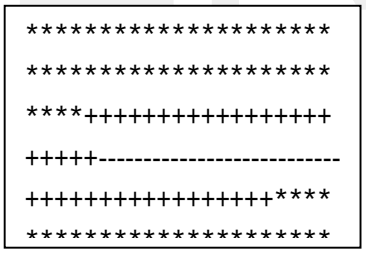


Fig3

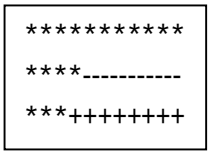
It is clear from above figures that specie in
Fig 1: has more Sattwa guna or mode than other two gunas Rajas and Tamas so will show properties goodness, existence, reality, subtle, manifestation etc.
Fig 2: has more Rajas guna or mode than Sattwa and Tamas so will show properties motion, activity, passion etc.
Fig 3: has more Tamas guna or mode than Sattwa and Rajas so will show properties stability ,grossness, darkness etc

Now each species of universe has different size and mass and so that energy to composition of each species is also different means total sum of gunas or modes of natural definitely more in planet than Now each species of universe has different size and mass and so that energy to composition of each species is also different means total sum of gunas or modes of natural definitely more in planet than human who have more than atomic particles etc.

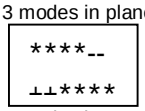
Let’s clear with example:



Total Composition of 3 modes in planet



Total Composition of 3 modes in Human



Total Composition of 3 modes in atomic particles

It is clear that Total composition of 3 gunas:
In planet > In Human > In Atomic particles
So the actual nature of any species is depending upon two things regarding modes of nature:

1) Its total composition of 3 modes which generally large in big size and mass species and less in small size and mass species.
2) Individual composition of 3 gunas in its composition means in what ratio Sattwa or Rajas or Tamas is present in particular species.

3. Four fundamental interactions in nature Explanation:

The four fundamental interactions in nature are nothing but cohesion and interactions of different modes with each othe

Electromagnetic force: (S,R)

A type of physical interaction that occurs between electrically charged particles. The electromagnetic force usually shows electromagnetic fields, such as electric fields, magnetic fields, and light. The science of electromagnetic phenomena is defined in terms of the electromagnetic force, sometimes called the Lorentz force, which includes both electricity and magnetism as elements of one phenomenon. Electrons are bound by electromagnetic wave mechanics into orbitals around atomic nuclei to form atoms, which are the building blocks of molecules. This governs the processes involved in chemistry, which arise from interactions between the electrons of neighboring atoms, which are in turn determined by the interaction between electromagnetic force and the momentum of the electrons. The photon is the particle, or quantum, which carries electromagnetic force. It is wave and particle at the same time and always moves with the speed of light.

Shamkhya Explanation: Electromagnetic force is interaction of Sattwa and Rajas mode in photon. If we see Sattwa is existence or attraction or essence or you can say magnetic part of electromagnetic force. It is Sattwa with which anything is appear in space-time and we know photons are stable particle with zero rest mass so Sattwa guna is present in photons and Rajas is actually mobile or activity or Impetus or we can say electric part of electromagnetic force. If we see photon is massless it means it don't contain Tamas mode of nature which signifies stability or Heaviness. Again it moves with speed of light so contain rajas which is responsible for motion so electromagnetic force is due to interplay for Sattwa and Rajas modes in Photons (a type of boson).

Weak Interaction: (T,S)

The weak interaction is responsible for the radioactive decay of subatomic particles, and it plays an essential role in nuclear fission. In the Standard Model of particle physics, the weak interaction is caused by the emission or absorption of W and Z bosons. Fermions are particles that have half-integer spin (one of the fundamental properties of particles). A fermion can be an elementary particle, such as the electron, or it can be a composite particle, such as the proton. The masses of W+, W−, and Z bosons are each far greater than that of protons or neutrons, consistent with the short range of the weak force. The force is termed weak because its field strength over a given distance is typically several orders of magnitude less than that of the strong nuclear force and electromagnetic force. Important examples of weak interaction include beta decay, and the production, from hydrogen, of deuterium needed to power the sun's thermonuclear process. Most fermions will decay by a weak interaction over time. Such decay also makes radiocarbon dating possible, as carbon-14 decays through the weak interaction to nitrogen-14. It can also create radioluminescence, commonly used in tritium illumination, and in the related field of betavoltaics. The weak interaction is unique in that it allows for quarks to swap their flavour for another. For example, during beta minus decay, a down quark decays into an up quark, converting a neutron to a proton. Also the weak interaction is the only fundamental interaction that breaks parity-symmetry, and similarly, the only one to break CP-symmetry. This mediates transformation of quarks and leptons and helps determine the composition of atomic nuclei.

(i.e. gravity is 38 orders of magnitude weaker), 10−36 times

Shamkhya Explanation: Weak Interaction force is due to mainly Tamas mode and little bit Sattwa mode in any particle. We know that weak interaction is caused by the emission or absorption of W and Z bosons. W and Z bosons are high mass particles it means they are dominating by Tamas mode of nature also W and Z bosons have very small life time so they also contain very small notables mode of Sattwa because Sattwa is mode of existence. So Weak interaction is mainly due to Tamas and slightly Sattwa mode.

Strong Interaction: (S)

In particle physics, the strong interaction is the mechanism responsible for the strong nuclear force (also called the strong force, nuclear strong force or color force) Effective only at a distance of a femtometer, it is approximately 100 times stronger than electromagnetism, a million times stronger than the weak force interaction and 1038 times stronger than gravitation at that range. It ensures the stability of ordinary matter, as it confines the quark elementary particles into hadron particles, such as the proton and neutron, the largest components of the mass of ordinary matter. Furthermore, most of the mass-energy of a common proton or neutron is in the form of the strong force field energy; the individual quarks provide only about 1% of the mass-energy of a proton. The strong interaction is observable in two areas: on a larger scale (about 1 to 3 femtometers (fm)), it is the force that binds protons and neutrons (nucleons) together to form the nucleus of an atom. On the smaller scale (less than about 0.8 fm, the radius of a nucleon), it is the force (carried by gluons) that holds quarks together to form protons, neutrons, and other hadron particles. The strong force inherently has so high a strength that the energy of an object bound by the strong force (a hadron) is high enough to produce new massive particles. Thus, if hadrons are struck by high-energy particles, they give rise to new hadrons instead of emitting freely moving radiation (gluons). The binding energy that is partly released on the breakup of a nucleus is related to the residual strong force and is harnessed in nuclear power and fission-type nuclear weapons. The strong interaction is thought to be mediated by massless particles called gluons that are exchanged between quarks, antiquarks, and other gluons. Gluons, in turn, are thought to interact with quarks and gluons as all carry a type of charge called color charge. another including stars, planets, galaxies and even light and sub-atomic particles. Gravity is responsible for the complexity in the universe, by creating spheres of hydrogen, igniting them under pressure to form stars and grouping them into galaxies. Without gravity, the universe would be an uncomplicated one, existing without thermal energy and composed only of equally spaced particles.

the strength of the electromagnetic force, and 10−29 times the strength of the weak force. As a consequence, gravity has a negligible influence on the behavior of sub-atomic particles, and plays no

Color charge is analogous to electromagnetic charge, but it comes in three types rather than one (+/- red, +/- green, +/- blue)

Its in a different type of force, with different rules of behavior. These rules are detailed in the theory of quantum chromodynamics (QCD), which is the theory of quark-gluon interactions. Just after the Big Bang, and during the electroweak epoch, the electroweak force separated from the strong force.

Shamkhya Explanation: Strong Interaction force is cohesion of Sattwa mode in any particle. The gluon is the carrier of the strong interaction, which keeps together the quarks in the hadrons and the hadrons via pion. Gluon is having zero rest mass means no tamas and also gluon is stable particle. So strong interaction is due to the Sattwa mode of Gluon particles. Again we know Sattwa is responsible for existence or manifestation or cohesion in any particle which is strongest so that's way this force is strongest interaction among all four forces.

Gravitation: (S, T)

Gravitation is a natural phenomenon by which all things with mass are brought towards (or 'gravitate' towards) one another including stars, planets, galaxies and even light and sub-atomic particles. Gravity is responsible for the complexity in the universe, by creating spheres of hydrogen, igniting them under pressure to form stars and grouping them into galaxies. Without gravity, the universe would be an uncomplicated one, existing without thermal energy and composed only of equally spaced particles. On Earth, gravity gives weight to physical objects and causes the tides. Gravity has an infinite range, and it cannot be absorbed, transformed, or shielded against. Gravity is the weakest of the four fundamental interactions of nature. The gravitational attraction is approximately 10−38 times the strength of the strong force (i.e. gravity is 38 orders of magnitude weaker), 10−36 times the strength of the electromagnetic force, and 10−29 times the strength of the weak force. As a consequence, gravity has a negligible influence on the behavior of sub-atomic particles, and plays no role in determining the internal properties of everyday matter (but see quantum gravity). On the other hand, gravity is the dominant force at the macroscopic scale that is the cause of the formation, shape, and trajectory (orbit) of astronomical bodies, including those of asteroids, comets, planets, stars, and galaxies. It is responsible for causing the Earth and the other planets to orbit the Sun; for causing the Moon to orbit the Earth; for the formation of tides; for natural convection, by which fluid flow occurs under the influence of a density gradient and gravity; for heating the interiors of forming stars and planets to very high temperatures; for solar system, galaxy, stellar formation and evolution; and for various other phenomena observed on Earth and throughout the universe.

Shamkhya Explanation: Gravitation force is due to mainly Sattwa mode and little bit Tamas mode. Or we can compare it opposite of weak interaction force which is mainly due to Tamas and little bit Sattwa.

4. Elementary Particles

Ordinary matter and the forces that act on matter can be described in terms of elementary particles. These particles are sometimes described as being fundamental, since they have an unknown substructure, and it is unknown whether or not they are composed of smaller and even more fundamental particles. Of central importance is the Standard Model, a theory that is concerned with electromagnetic interactions and the weak and strong nuclear interactions. The Standard Model is supported by the experimental confirmation of the existence of particles that compose matter: quarks and leptons, and their corresponding "antimatter" duals, as well as the force particles that mediate interactions: the photon, the W and Z bosons, and the gluon. The Standard Model predicted the existence of the recently discovered Higgs boson, a particle that is a manifestation of a field within the Universe that can endow particles with mass.

Sankhya Explanation: we have explained above about different types of elementary particles formation with different domination modes like quarks and leptons.

But there are some antimatters are also present which has composition of modes just anti (or opposite) to their particles. Means when one particle combines with it anti particle both disappear or lost their individual significance. Or we can say two manifested, existing one is particles and other is it anti particle combine then manifestation converted in to un manifestation.

But there are also some force particles which are responsible to form any existing particle composition of mode these are like photon, the W and Z bosons and gluon. We can say these are the force particles that are responsible to make blending of different modes all together in any particle or we can say these are the particle due to which different interactions between modes is possible as we explain above 4 types of forces called electromagnetic, weak interaction, strong interaction and gravitational. There is one more recently discovered particle called higgs boson about which we will discuss separately.

Hadrons

A hadron is a composite particle made of quarks held together by the strong force. Hadrons are categorized into two families: baryons (such as protons and neutrons) made of three quarks, and mesons (such as pions) made of one quark and one antiquark. Of the hadrons, protons are stable, and neutrons bound within atomic nuclei are stable. Other hadrons are unstable under ordinary conditions and are thus insignificant constituents of the modern Universe. From approximately 10¯6 seconds after the Big Bang, during a period is known as the hadron epoch, the temperature of the universe had fallen sufficiently to allow quarks to bind together into hadrons, and the mass of the Universe was dominated by hadrons. Initially the temperature was high enough to allow the formation of hadron/anti-hadron pairs, which kept matter and antimatter in thermal equilibrium. However, as the temperature of the Universe continued to fall, hadron/anti-hadron pairs were no longer produced. Most of the hadrons and anti-hadrons were then eliminated in particle-antiparticle annihilation a reaction, leaving a small residual of hadrons by the time the Universe was about one second old.

Sankhya Explanation: Some particles made of combinations of quarks and by strong force choishen of Sattwa. In combined form they called hadrons. Baryons are hadrons made of three quarks as we discussed above like protons and neutrons.
Similarly mesons are made up of one quark and one anti quark example pions.
Protons are stable it means we can observe it for long time in simple terms it existence is for long time again existence is the attribute of Sattwa guna so proton possess composition of 3 guna with more Sattwa.
Neutron is not stable having life time of 885.7 second but when bound with atomic nuclei with force particles then it will stable means after biding neutron to atomic nuclei with force particle the composition of modes in neutron is change and make it more Sattwa dominating which is responsible for existence or stability.
Similarly we can understand about whole hadron epoch.

Leptons

No two leptons of the same species can be in exactly the same state at the same time. Two main classes of leptons exist: charged leptons (also known as the electron-like leptons), and neutral leptons (better known as neutrinos). Electrons are stable and the most common charged lepton in the Universe, whereas muons and taus are unstable particle that quickly decay after being produced in high energy collisions, such as those involving cosmic rays or carried out in particle accelerators. Charged leptons can combine with other particles to form various composite particles such as atoms and positronium. The electron governs nearly all of chemistry, as it is found in atoms and is directly tied to all chemical properties. Neutrinos rarely interact with anything, and are consequently rarely observed. Neutrinos stream throughout the Universe but rarely interact with normal matter.
The lepton epoch was the period in the evolution of the early Universe in which the leptons dominated the mass of the Universe. It started roughly 1 second after the Big Bang, after the majority of hadrons and anti-hadrons annihilated each other at the end of the hadron epoch. During the lepton epoch the temperature of the Universe was still high enough to create lepton/anti-lepton pairs, so leptons and anti-leptons were in thermal equilibrium. Approximately 10 seconds after the Big Bang, the temperature of the Universe had fallen to the point where lepton/anti-lepton pairs were no longer created. Most leptons and anti-leptons were then eliminated in annihilation reactions, leaving a small residue of leptons. The mass of the Universe was then dominated by photons as it entered the following photon epoch.

Photons

A photon is the quantum of light and all other forms of electromagnetic radiation. It is the force carrier for the electromagnetic force, even when static via virtual photons. The effects of this force are easily observable at the microscopic and at the macroscopic level because the photon has zero rest mass; this allows long distance interactions. Like all elementary particles, photons are currently best explained by quantum mechanics and exhibit wave–particle duality, exhibiting properties of waves and of particles.
The photon epoch started after most leptons and anti-leptons were annihilated at the end of the lepton epoch, about 10 seconds after the Big Bang.
Atomic nuclei were created in the process of nucleosynthesis which occurred during the first few minutes of the photon epoch. For the remainder of the photon epoch the Universe contained hot dense plasma of nuclei, electrons and photons. About 380,000 years after the Big Bang, the temperature of the Universe fell to the point where nuclei could combine with electrons to create neutral atoms. As a result, photons no longer interacted frequently with matter and the Universe became transparent. The highly redshifted photons from this period form the cosmic microwave background. Tiny variations in temperature and density detectable in the CMB were the early "seeds" from which all subsequent structure formation took place.
Sankhya Explanation: photons are force carrier for the electromagnetic force. As we know electromagnetic force is interaction between Sattwa and Rajas mode. Again photons constitution of Sattwa and Rajas with no Tamas. Because of absence of Tamas photons don't show grossness or don't have mass.
Again photons best explained by quantum mechanics and exhibit wave–particle duality, exhibiting properties of waves and of particles.
They show existence due to Sattwa and motion due to Rajas but absence of mass (no Tamas) so show best example of wave- particle duality we will explain it in more detail when discus about uncertainty principle.

5. Higgs Boson

The Higgs boson (or Higgs particle) is a particle that gives mass to other particles. It is part of the Standard Model in physics, which means it is found everywhere. It is one of the 17 particles in the Standard Model. The Higgs particle is a boson. Bosons are particles responsible for all physical forces except gravity. Other bosons are the photon, the W and Z bosons, and the gluon. Scientists do not yet know how to combine gravity with the Standard Model. It is very difficult to detect the Higgs boson with the equipment and technology we have now. These particles are believed to exist for less than a septillionth of a second.
Because the Higgs boson has so much mass (compared to other particles), it takes a lot of energy to create one.
Sankhya Explanation: Higgs boson gives mass to other particles but they are very unstable it means Higgs boson has constitution of very less Sattwa (because there existence remains for very less time) and remaining all is Tamas (which is responsible for mass)
If we see in point of view of modes we can categories particles according to combinations of 3 modes, some particles of these combinations are discovered and other still to discover.

List of important particles:

Particle	Rest Mass (Kg)	Rest Energy (Kg.m2s-2)	Mean Life time	Mode Composition (if mode is negligible then it not show)
Electron e-,β-	9.10938 356x10^{-31}	8.187 105 06[36]x 10^{-14}	Stable	S>R >T
The Muon	1.883 53 1 594 x 10^{-28}	1.692 833 667[86] x 10^{-11}	2.2x10^{-6} Sec	T>R>S

The Tau	3.167 47 x 10^{-27}	2.846 78[26] x10^{-10}	2.9x10^{-13} Sec	T>R>S
Photon ϒ	0		Stable	S>>R
Proton p	1.672621 9 × 10^{-27}	1.503 277 484[66]x 10 $^{-10}$	Stable	S>>T
Neutron n	1.6749 x 10^{-27}	1.505 349 631[66] x10^{-10}	14.77 min	T>S
Pions π	2.490810 3X10^{-25}	2.236 1607[56] x10^{-11}	2.6x10^{-8} Sec	R>T>S
Kaon K	8.800863 06 X10^{-25}	7.909 58[26] x10^{-11}	1.2x10^{-8} Sec	R>T>S
Neutrino v	Very lightweigh t	=10^{-13}		
Up Quark (u)	2.673469 722e-30 - 5.878312 308 x10^{-30}	3.8 x10^{-13}	Stable	S>T
Down Quark (d)	6.243631 152e-30 - 1.069387 889 x10^{-29}	7.7 x10^{-13}	Stable	S>T
Strange Quark (s)	1.248726 23e-28 - 2.318114 119 x10^{-28}	1.67 x10^{-11}	1.24x10^{-8} Sec	R>T>S
Charm Quark (c)	2.258334 672 x10^{-27}	2.03 x10^{-10}	1.1x10^{-12} Sec	R>T>S
Bottom Quark (b)	7.489036 302 x10^{-27}	6.7 x10^{-10}	1.3x10^{-12} Sec	R>T>S
Top quark (t)	3.088604 772 x10^{-25}	2.743 x10^{-8}	4.2x10^{-25} Sec	R>T>S
The Gluon(g)	0		Stable	S>>R
The W boson (w)	1.433709 x 10^{-25}	1.28791[24] x 10^{-8}	3x10 $^{-25}$Sec	R>T>>S
The Z boson (z)	1.6273 x 10^{-25}	1.460986[33] x 10^{-8}	3x10 $^{-25}$ Sec	R>T>>S
Higgs boson	2.2417 x 10^{-25}	2.007[10] x 10^{-8}	1.56X 10^{-22} sec	T
Graviton				S>>T

It is noticeable from Sankhya that every creature of universe is a constitution of 3 gunas at any time and this constitute is change rapidly. In big creatures like human the changes are slow to predict because human body and mind contain complex matrix of these three modes or gunas and every time some portion of Sattwa (goodness, subtle) is convert into Tamas (gross, heavy) by the help of Rajas activity) or Tamas into Sattwa. at any time the mode is define by the resultant of all modes.

But in small particles changes are so fast because lifetimes of these particles are unable to measure from eyes. Suppose one particle has in the mode of Sattwa or existence predominating at any time but as we try to measure its parameters its change to the other composition say Tamas(stability) or is in between stage of change means in Rajas mode so we can't predict its parameter accurately at given time.

Again we will try to take practice example:

Unstable particle called Muon

Muon is created at high altitude by fast cosmic-ray from space when they collide with atomic nuclei in the earth atmosphere.

A muon has a mass 207 times that of the electron and has a charge of either +e or –e.

It decays into an electron or a positron after an average lifetime of 2.2μs (2.2X10¯6 sec) (very small lifetime to measure parameters)

Cosmic-ray muons have speed of about 2.994x10^8 m/s (0.998C)

T=2.2 μs

Their average lifetime, muons can travel a distance of only =vxt = 2.994x10^8 m/s X 2.2X10¯6 sec = 0.66 Km

So you can understand That in very sort life muon travel almost half mile so we can't measure its position and momentum accurately because when we try to measure one parameter muon will be in one mode (guna) of nature and as we try to measure other parameter it will change in to other mode or in between change means in rajas (motion) mode.

We know from Einstein equation E=mc2

But if we understand we can say in terms of Samkhya

Rajas = Tamas c2

Or actually all three modes are inter convertible so we can say

Sattwa = constant 1 Rajas = constant 2 Tamas

Special note: In maximum particles we can calculate mass from energy and energy from mass with the help of E=mc2 but Sattwa mode show existence or manifestation of particle in space time, we know from sankhya philosophy that it is convert to and from Rajas and Tamas but till date science is unable to find constant that can link position of particle in space-time to its mass or energy.

Now we know Sattwa is manifestation of matter or existence of any particle in space-time so we can say

Sattwa = f(x,y,z,t)

Or

Sattwa = f(existence in 3 dimensions, lifetime of particle)

So in short we can say for atomic particles:
Sattwa depends upon lifetime of particle (because size of atomic particle in 3D is negligible), Rajas is rest energy which easily measure with the help of Einstein equation and from Tamas means rest mass in most of the particles.

6. Creation of Universe

The Universe is all of time and space and its contents. The Universe includes planets, stars, galaxies, the contents of intergalactic space, the smallest subatomic particles, and all matter and energy. The observable universe is about 28 billion parsecs (91 billion light-years) in diameter at the present time. The size of the whole Universe is not known and may be infinite. Observations and the development of physical theories have led to inferences about the composition and evolution of the Universe.
The Big Bang theory is the prevailing cosmological model describing the development of the Universe. Space and time were created in the Big Bang, and these were imbued with a fixed amount of energy and matter; as space expands, the density of that matter and energy decreases. After the initial expansion, the Universe cooled sufficiently to allow the formation first of subatomic particles and later of simple atoms. Giant clouds of these primordial elements later coalesced through gravity to form stars. Assuming that the prevailing model is correct, the age of the Universe is measured to be 13.799±0.021 billion years.
The Universe consists of three constituents: space-time, forms of energy (including electromagnetic radiation and matter), and the physical laws that relate them. The Universe also encompasses all of life, all of history, and some philosophers and scientists even suggest that it encompasses ideas such as mathematics and logic.
Sankhya Explanation: Three constituents of universe are:
Space-time is responsible to make presence of any particle or matter in universe means space-time is basic requirement of existence so it must be Sattwa (goodness) mode of nature which we know is responsible of any manifestation or existence.
Form of energy is Rajs because if there is visible energy then must be motion or Rajas. And matter is due to Tamas mode of nature because Tamas is grossness or heaviness and also matter is identifying by mass or heaviness.
Physical laws that relate them are the interaction between these gunas or modes. As we explain above interaction between modes is of 4 types in scientific term electromagnetic, weak interaction, strong interaction and gravitation.
Chronology and the Big Bang
The prevailing model for the evolution of the Universe is the Big Bang theory. The Big Bang model states that the earliest state of the Universe was extremely hot and dense and that it subsequently expanded. The model is based on general relativity and on simplifying assumptions such as homogeneity and isotropy of space. A version of the model with a cosmological constant (Lambda) and cold dark matter, known as the Lambda-CDM model, is the simplest model that provides a reasonably good account of various observations about the Universe. The Big Bang model accounts for observations such as the correlation of distance and redshift of galaxies, the ratio of the number of hydrogen to helium atoms, and the microwave radiation background.

Sankhya Explanation: Before creation there is a state of rest means all the three mode were in equilibrium and no motion is present. And all the matter and energy were present in cohesion dense form.
In that state all three gunas or modes were present in the unmovable heap. Sattwa, Rajas and Tamas were in equilibrium.
If we enveloped or packed large matter and energy in a very small package it has very high temperature similar was the condition before creation.
When motion in that state is start due to Rajas mode the creation started because that was the time conversation of one mode to other start.
The initial hot, dense state is called the Planck epoch, a brief period extending from time zero to one Planck time unit of approximately $10^{-}43$ seconds. During the Planck epoch, all types of matter and all types of energy were concentrated into a dense state, where gravitation is believed to have been as strong as the other fundamental forces, and all the forces may have been unified. Since the Planck epoch, the Universe has been expanding to its present form, possibly with a very brief period of cosmic inflation which caused the Universe to reach a much larger size in less than $10^{-}32$ seconds.
Sankhya Explanation: It is clear when big bang happened or universal motion starts visible due to the Rajas, all the modes are in indistinguishable and un spreadable form. It was the starting time scientist called this planck time which is actually approximately $10^{-}43$ seconds.
Again because this was the time when all three mode were so densely blended that no single mode property was dominating. And there is a heap of matter So Sattwa in inseparable from other state makes strong gravitation force.
After the Planck epoch and inflation came the quark, hadron, and lepton epochs. Together, these epochs encompassed less than 10 seconds of time following the Big Bang. The observed abundance of the elements can be explained by combining the overall expansion of space with nuclear and atomic physics.
As the Universe expands, the energy density of electromagnetic radiation decreases more quickly than does that of matter because the energy of a photon decreases with its wavelength. As the Universe expanded and cooled, elementary particles associated stably into ever larger combinations.
Sankhya Explanation: as time proceed from plank epoch to time almost 10 second following the big bang. All mode start expends its own and overall density of blend of three modes starts decreasing. As we know Sattwa is responsible to manifestation or existence to different particles like quark, hadron, and lepton start manifesting.
As universe expands conversation of one mode to other also start and due to Sattwa matter existence start visualizing in space so when Sattwa and Tamas increase Rajas start decreasing and motion is going to slow so energy density of electromagnetic radiation also decrease because individual particles manifestation start means Sattwa and Tamas increase.
Thus, in the early part of the matter-dominated era, stable protons and neutrons formed, which then formed atomic nuclei through nuclear reactions. This process, known as Big Bang nucleosynthesis, led to the present abundances of lighter nuclei, particularly hydrogen, deuterium, and helium. Big Bang nucleosynthesis ended about 20 minutes after the Big Bang,

When the Universe had cooled enough so that nuclear fusion could no longer occur. At this stage, matter in the Universe was mainly hot, dense plasma of negatively charged electrons, neutral neutrinos and positive nuclei. This era, called the photon epoch, lasted about 380 thousand years.

Sankhya Explanation: when matter existence start, stable proton and neutron start manifested because of different types of interaction (this was the time when we were able to know the modes of elementary particles) between particle dominating modes (Sattwa-Rajas-Tamas) in through elementary particles like quark, lepton etc. Science called this nucleosynthesis it was ended about 20 minutes after big bang.

Eventually, at a time known as recombination, electrons and nuclei formed stable atoms, which are transparent to most wavelengths of radiation. With photons decoupled from matter, the Universe entered the matter-dominated era. Light from this era could now travel freely, and it can still be seen in the Universe as the cosmic microwave background (CMB). After around 100 million years, the first stars formed; these were likely very massive, luminous, and responsible for the reionization of the Universe. Having no elements heavier than lithium, these stars also produced the first heavy elements through stellar nucleosynthesis.

Sankhya Explanation: Now time came when interplay of different particles start and many different form of matter start manifesting. The resultant particles properties were developed according to their modes of nature at the time of interaction with other particles, mode of particles to whom they were interacting and also mode of surrounding environment where they were interacting.

As matter start combining they start forming larger matter in this process big stars formation start which contained dense combination on 3 gunas or mode due to which gravitation force start forming in these starts.

The Universe also contains a mysterious energy called dark energy; the energy density of dark energy does not change over time. After about 9.8 billion years, the Universe had expanded sufficiently so that the density of matter was less than the density of dark energy, marking the beginning of the present dark-energy-dominated era. In this era, the expansion of the Universe is accelerating due to dark energy.

Sankhya Explanation: Now we know that anyplace where energy is present there must be presence of dominating Rajas mode. In visible form of energy it is necessary that it contains visible Rajas and Sattwa modes because Rajas is for energy and Sattwa for its presence or existence.

There is one combination of mode in which only Rajas mode is presence without Sattwa or Tamas(or without Sattwa and very less Tamas). So without Sattwa there is definitely energy (due to Rajas mode) but we can't define its existence because existence defining mode Sattwa is remains absent in this kind of energy. We can't predict its density change because it is not in manifested form. This is what scientist called dark energy.

Contents

The Universe is composed almost completely of dark energy, dark matter, and ordinary matter. Other contents are electromagnetic radiation (estimated to be from 0.005% to close to 0.01%) and antimatter. The total amount of electromagnetic radiation generated within the universe has decreased by 1/2 in the past 2 billion years.

Sankhya Explanation: Dark energy is nature with single mode called Rajas without Sattwa or Tamas (or only Rajas and very less Tamas). Similarly dark matter is form of nature with only one mode called Tamas (because stability of mass is present due to Tamas) (dark matter contains only Tamas mode or very high composition of Tamas and very less Rajas) but we can't identify its presence because of absence of Sattwa (responsible for existence in space time)

Ordinary matter is different types of combination of three modes in different ratio.

Ordinary matter commonly exists in four states (or phases): solid, liquid, gas, and plasma. However, advances in experimental techniques have revealed other previously theoretical phases, such as Bose–Einstein condensates and fermionic condensates.

Ordinary matter is composed of two types of elementary particles: quarks and leptons. For example, the proton is formed of two up quarks and one down quark; the neutron is formed of two down quarks and one up quark; and the electron is a kind of lepton. An atom consists of an atomic nucleus, made up of protons and neutrons, and electrons that orbit the nucleus. Because most of the mass of an atom is concentrated in its nucleus, which is made up of baryons, astronomers often use the term baryonic matter to describe ordinary matter, although a small fraction of this "baryonic matter" is electrons.

Soon after the Big Bang, primordial protons and neutrons formed from the quark–gluon plasma of the early Universe as it cooled below two trillion degrees. A few minutes later, in a process known as Big Bang nucleosynthesis, nuclei formed from the primordial protons and neutrons. This nucleosynthesis formed lighter elements, those with small atomic numbers up to lithium and beryllium, but the abundance of heavier elements dropped off sharply with increasing atomic number. Some boron may have been formed at this time, but the next heavier element, carbon, was not be formed in significant amounts. Big Bang nucleosynthesis shut down after about 20 minutes due to the rapid drop in temperature and density of the expanding Universe. Subsequent formation of heavier elements resulted from stellar nucleosynthesis and supernova nucleosynthesis

Sankhya Explanation: again different states or phases solid, liquid, gas and plasma are nothing but different permutations and combinations of three modes called Sattwa, Rajas and Tamas. Again there are infinite possibility of states like some are more solid less liquid etc. these all states depends upon the different combination of 3 modes in constitutions of matter.

Basic building blocks of ordinary matter which science can identify are quarks and leptons because in these types of particles Sattwa guna is present is that amount so that existence or manifestation of these particles is possible but there are many other particles which currently not predictable by science because they contain less or zero Sattwa guna or mode of nature.

Now there are different types of quarks possible because of little bit different in the composition of 3 modes but more or less there main composition remains almost similar. Till date 6 types of quarks have identified now with combination of two up quarks and one down quark (down and up are 2 among 6types of quarks) form a big particle proton with different modes composition.

Similarly neutron is formed from two down quarks and one up quark.

Electron is a lepton which has different configuration of 3 modes.

Now when proton, neutron combined they form an atomic nucleus with combination of electron they form atom. Again different numbers of proton, neutron and electron form different atoms of different elements with different compositions of 3 gunas.

Most of the mass of an atom is concentrated in its nucleus we know nucleus is made of neutron and proton and quant able mass in any particle is due to dominating Tamas mode so we can say neutron and proton has more Tamas mode than electron.

7. Heisenberg uncertainty principle:

The position and momentum of a particle cannot be simultaneously measured with arbitrarily high precision.

Important steps to understand the uncertainty principle are wave-particle duality. As we proceed downward in size to atomic dimensions, it is no longer valid to consider a particle like a hard sphere, because the smaller the dimension, the more wave-like it becomes.

Explanation with Sankhya philosophy:

It is clear from Sankhya philosophy that composition of modes or guna in every element is continues in process to convert from one mode to other. In large species like human being composition is large and complex but every time it changes in our body and mind. We can't perceive changes in short time spam in large species because it contains huge amount of modes components and it will take time to completely change resultant of modes as explain above in case of large planet and human beings.

But as we go to atomic dimensions there composition of mode made with very less amount of modes components so in small change of one mode resultant will change so we can perceive that.

This rapid change shows wave like pattern.

For example if a particle is in stage of Sattwa (goodness) it will change to Tamas with Rajas very fast because in these particle Rajas has very less matter to change from Sattwa to Tamas which Rajas can change very fast.

Now again we try to understand uncertainty principle from above explanation:

According to Heisenberg:

The position and momentum of a particle cannot be simultaneously measured with arbitrarily high precision.

Or $\Delta x \Delta P \geq \hbar/2$

Where Δ here indicates standard deviation, a measure of spread or uncertainty; x and p are a particle's position and linear momentum respectively.

Now In Sankhya Sattwa or goodness mode also means manifestation or existence means Sattwa is mode to identify something in space so we can say in above equation Sattwa = x (position of particle in space)

Similarly rajas is activity or motion so we can say Rajas = velocity of particle = v

And Tamas signifies heaviness or stability so Tamas = mass of particle = m

We know that momentum of any particle P = M X V = Mass X Velocity

Or P = Tamas mode X Rajas mode

So we can write Heisenberg uncertainty equation

$\Delta Sattwa \Delta(Tamas \times Rajas) \geq \hbar/2$

We have proved above that in atomic particles one mode is change into other to fast that we cannot tell the composition of modes in particles.

More clearly suppose a quantum particle is in Sattwa (goodness) dominating mode at any given time as we try to measure it position (Sattwa show existence in space-time) it converted in to Tamas mode by Rajas mode (Rajas is convertor or make things active) now as we try to measure the momentum of this particle or we can say its Tamas and Rajas mode(consider now particle is in Tamas dominating mode) it will converted again to Sattwa and again if we try to measure position again it again converted to Tamas or Rajas because we know in quantum particles changes of modes are so fast that we can't predict them.

In more sankhya terms, we cannot tell composition of modes in any quantum particles with accuracy.

But as we told above in large species this uncertainty is not apply and we can tell about resultant or dominating mode at any given time.

So reason of uncertainty in quantum particles is clear

8. Conclusion:

Every creature of universe visible or invisible is due to the ever changing matrix of three modes of nature called Sattwa, Rajas and Tamas.

9. References:

wikipedia