

Under The Surface

The physical model of the universe that has been created by the human mind is by and large, a model that the human mind has developed on a first level by use of the senses that the human body possesses, most notably the sense of sight. The direct observations of how objects behave and interact, with the aid of the abstract tool of mathematics has enabled a model of understanding and predicting physical phenomenon and behaviours to be developed and exploited as technology.

However, these mathematical models that form the basis of theories of physics can be limited, or even be incorrect in their true nature by the biases that the human mind has developed in what is observed through the human senses, such as sight and touch. What can be directly observed are the physics of the world which the human body can interact with and observe. The motions and impact of objects, and the pressure of the human body from such motions and impacts in one example. The observation of the behaviours of physical entities that are found to be constant conducted under experimental conditions lead to relationships and concepts of force, energy, momentum, heat, temperature, work and many others to be developed and defined.

From these experiments and definitions of physical phenomenon, mathematical models are developed, which in turn are exploited to create technology, engineering and advanced tools. In all of what the human mind has created as a model of the physics of nature expressed as theories, these theories may be flawed to understand the nature of the universe by an aspect that they do not express the most fundamental level of the processes that the universe is governed by, and which is the driver of the observed phenomenon and behaviours.

On a fundamental level, objects are perceived as being in certain physical states of a solid, liquid or gas etc. for example. In reality with current knowledge and understanding, what separates which physical state an object is in is determined by the energy state that the atoms that make up the object are, and the constituency of the atoms themselves and how they interact with each other. Any solid, given a sufficient amount of energy can be turned into a liquid, and from a liquid into a gas, and from a gas into a plasma of individual atomic nuclei.

What is common with all states of matter is that on the atomic level, all matter interacts with each other through the interaction of electromagnetic fields. In particular, the electromagnetic property of photons of a specific energy can expel electrons from atoms and molecules, or that the photon gives motion to atoms and molecules. Through observation of such physical states of matter, the human mind has created concepts such as heat, temperature, the ideal gas equation, and the theory of thermodynamics with all sorts of relationships and physical properties.

With these theories and concepts, a mind set can be embedded that leads away from the fundamental physical process that gives all these derivatives, which is that of the interaction of the electromagnetic fields of matter and photons.

When matrices of solid matter interacts such as in billiard ball collisions, an observation of impassibility can be perceived and theories of kinematics created deriving laws of motion and energy. On the most fundamental level, kinematics can be argued to be the interaction of the net effect of individual electromagnetic fields of the atomic matter that makes up the entities concerned.

It is the interactions of these net electromagnetic fields of bodies of individual atoms of matter arranged in some crystalline matrix formation that form the basis of kinematics. Observations of motion and the derived concepts, laws of motion and theories that the human mind has created may be of an emergence of nature from a more fundamental level of physics. What this means is that such physics as observed as the concept of conservation of momentum, though true through experiment, may be an emergent physics of the interaction of a physical property of mass. Mass of the most fundamental constituents of matter may in turn be an emergent property of the interaction of electromagnetic or other properties of nature.

What is perhaps needed to gain a greater understanding of the universe is that when observing the universe and creating models and postulating theories of the processes that are occurring so as to develop an understanding of the universe and its workings, the human mind needs to go beyond what is observed on the surface and go deeper. Theories of thermodynamics, kinematics, gasses

and states of matter etc though working and giving highly predictable results, may not actually give the true and fundamental understanding of the physical processes and properties at the most fundamental level of the universe from which all of physical phenomenon and behaviour that is most commonly observed emerges and is derived from.

It can be quite erroneous to translate what is observed in kinematics of the macro world to that of the micro world where masses and structure of matter, along with the processes of interaction would be very different. As argued here, all forms of interaction of all matter down to the atomic scale can be explained by the interaction of one electromagnetic field, where the human mind may interpret that each process has its own process, and that there are many different processes involved.

Sure, human observation and experiment may produce models that give equations, graphs and tables of properties or constants that give excellent results that can be applied in engineering and technology, but at the most fundamental level, give the misleading or wrong physical theory that ignores the fundamental physical process that gives the correct understanding of what is driving the observed behaviours and phenomenon of the universe.

In order to form the correct understanding of the universe, its processes and its structure, it is proposed that the human mind needs to strip away all of the overlying layers of physics that it has perceived to be present until nothing but the most fundamental and bottom layer is all that remains. Once this has been achieved, then a full understanding of the universe can be achieved, and from that, like the atoms that make up the chemistry of life that create the human mind to contemplate such questions to be answered, the rest can emerge, derived and be constructed to a more complete picture of understanding leading to new physics and all that goes along with it.