Physical Interpretation of Relativistic Phenomena by the Application of Field Mechanics

Viraj Fernando
Independent Researcher
History and Philosophy of Physics
virajplf@yahoo.co.uk

Abstract. All phenomena without exception arise from interactions of energy, and further there being no interaction of energy that is not governed by the Field, with the ingress and egress of energy from and to the Field. Newton realized the existence of the field as a nebular notion, and wrote in the *General Scholium* "a certain most **subtle spirit** which **pervades** and **lies hid** in **all gross bodies**; by the **force and action of which spirit** the **particles** of bodies attract one another at near distances, and cohere if contiguous". But he could not develop physics on the basis of Field Mechanics because.." nor are we furnished with that **sufficiency of experiments** which is required to an accurate determination and demonstration of the **laws by which this spirit operates". So right from start Physics has been moving in the wrong direction**. And we may note that Newton has developed his mechanics under the veil of space and time as a makeshift solution, without the Field, only because he could not discern the laws by which the Field operates. However, Newtonian mechanics was sufficient for the problems of slow moving bodies and it reigned supreme for 200 years. Then with experiments with fast moving particles, Maxwell realized that the direction in which science has to develop is Field Mechanics. He wrote: "In fact the **special work** which lies before the physical inquirer in the **present state of science** is the determination of **the quantity of energy which enters and leaves** a material system during the passage of the system from its standard state to any other definite state". But the ball has been dropped, even though Weyl endorsed Maxwell with the following restatement of the principle of conservation of energy: "The total energy as well as total momentum remains unchanged,: they merely stream from one part of the field to another, and become transformed from field energy and field momentum into kinetic energy and kinetic momentum of matter and *vice-versa*". It was clear to them that the most essential task was to discover the laws under which the Field operates. Yet physics has hitherto continued to develop in various other directions under the veil of space-time, instead of discarding this veil and taking the bull by the horns. Consequently, this space-time approach has taken physics to an unsolvable crisis. The only way out of this crisis, is to make a complete break and develop Field Mechanics from ground up. The algorithm we have developed by the geometrisation of the energy-momentum equation, reveals to us the laws by which the Field operates. For instance in the case of a motion of a particle, the so-called 'relativistic phenomenon' of slowing down of internal processes occurs as a consequence of the Field drawing energy T from the particle, to combine it with field energy V, to produce energy E which underlies the repulsive force that emerges when the particle is in motion. Similarly, energy for the spin is produced by drawing a fraction energy from motive energy (i.e. momentum x c) and combining with field energy. Wherever a gamma-factor appears in an equation, it is the tell-tale sign of the operation of the Field to withdraw energy from the empirical system or to supply field energy to the system. There is no interaction that occurs without the interference of the Field. In classical equations, we do not see the gamma-factor only because when $v << c$, $\Gamma \to 1$, and not because the Field has not been involved in the interaction. With the Algorithm which incorporates the action of the Field, we have developed a simple but a consistent approach to Non-linear Physics valid for all velocities $0<v<c$. Within the restrictive space of this paper we have derived the equation $E = mc^2$, equations for electric and magnetic forces, Lorentz transformation, Time Loss in a GPS atomic clock in motion, Time Delay of disintegration of a fast moving Muon etc..