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Communication

Does Electricity Suggest the Universe is Constantly Recycled?

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Abstract - This was inspired by an article in New Scientist which looked at the everyday experience of static electricity and was amazed by science's lack of knowledge about what it is. My very short article speaks of change in orientation of fields caused by movement in the opposite direction making negative charge become positive and positive become negative, and describes the process with the equations $180^0\Delta O = + \Rightarrow -$ (180 Degree Change in Orientation Equals Positive Becomes Negative) as well as $180^0\Delta O = - \Rightarrow +$. It also looks at something from a different angle viz electric-magnetic equivalence, and refers to a chemistry experiment at Oxford, quarks, and digital waves.

Keywords - Electric-magnetic equivalence; Quarks; Digital waves.

There is an important correlation between Albert Einstein's relativistic equations and the Prandtl-Glauert equations for fluid flow, which can be seen through their pressure coefficients. Maxwell had already established a powerful correlation between electromagnetic waves and fluid dynamics. In 1919, Einstein published a paper titled "Do gravitational fields play an essential role in the structure of elementary particles?" [1] It's well known that solutions refract electromagnetic waves of light passing through them. Similarly, the gravitational and electromagnetic (GEM) waves resulting in particles suspended in solution (the photons and gravitons of fluid space-time) would be bent around massive objects in space (gravitationally lensed) and this refraction alters orientation of Fig. 1's magnetic and electric fields. When the gravitational and electromagnetic waves enter the solution and are lensed - changing orientation by, say, 45 degrees - the electric fields no longer possess up-down motion but have a tendency to vibrate left to right. If the orientation change continues to 90 degrees, the left-right tendency becomes a certainty and 'electric' is then described as 'magnetic'. The doubling from 45 to 90 is important. If the angle of incidence of the GEM waves is 90 degrees, the potential exists for the electric field to be inverted 180°.

Let's apply this to the electric charges of subatomic particles. Imagine a mobile particle on the line of propagation which, upon encountering the force of an advancing positive-period wave (above Fig. 1's direction of propagation), remains on the propagation line. It isn't pushed aside but must ascend to the crest of the wave. After reaching this highest point, it moves in the opposite direction and descends to the trough of the wave's following

negative-period (below the line). Inversion from "down-up" motion to "up-down" (movement in the opposite direction) can be viewed as electrical attraction of particles becoming repulsion i.e. as the positive charge of, say, a proton switching to the negative charge of an antiproton and no longer attracting – but now repelling – an electron. The previous typing can be summed up with the equation $180^0\Delta O = + \Rightarrow -$ (180 Degree Change in Orientation Equals Positive Becomes Negative). Of course, it also means negative can become positive: $180^0\Delta O = - \Rightarrow +$. Applied to the magnetic fields of particles, North and South poles can be interchanged – as occurs with Earth's magnetic-field reversals.

An experiment at Oxford University in England found similarly charged particles suspended in a solution can actually attract each other over long distances. [2] The level of attraction is closely linked to the solution's pH. The pH scale used to specify the acidity of solutions indicates the activity of hydrogen ions. This activity of electrical charges could, when acting over a relatively long distance and time, affect the motion of particles and the orientation of their electric fields. The experiment had no effect on positive particles in water.

The Standard Model of particle physics says a neutral neutron is made up of three charged particles called quarks – two down quarks (each with a charge of -1/3) and one up quark (charge +2/3). Many attempts to measure the distance between charged regions have found it is too small to be detected. Physicists Roberto Peccei, Helen Quinn, Frank Wilczek, and Steven Weinberg suggested the variable is not zero but a dynamical quantity that slowly lost its charge, evolving to zero after the Big Bang. How could the electric di-pole moment's un-detectability be explained by someone who doesn't accept the Big Bang? Every particle is constantly in motion, thus permitting the possibility of positive and negative transforming. Taking the quark description of a neutron gives us (-1/3) + (-1/3) + (+2/3) which, in the words of Peccei, Quinn, Wilczek and Weinberg, evolves to zero. When the change in orientation of fields caused by movement in the opposite direction makes negative charge become positive and positive become negative, the equation is (1/3) + (1/3) + (-2/3) which, in this case, represents un-detectability.

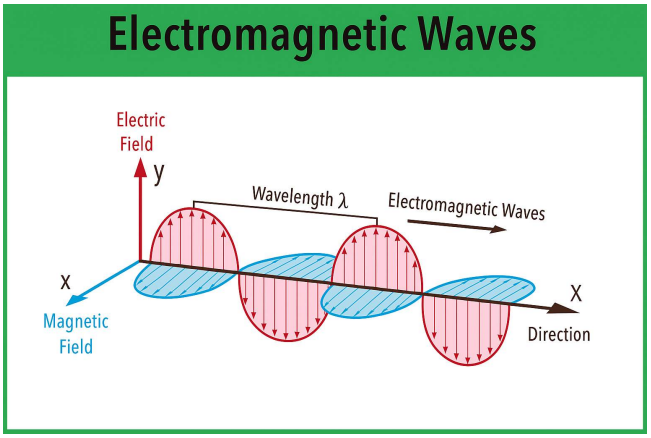

Figure 1: Classical Electromagnetic Wave showing the perpendicular magnetic and electric fields, plus the Wavelength denoted by Greek letter lambda λ (the black arrow indicates the direction of propagation). A future theory of quantum gravity might combine all classical waveforms with a quantum perspective resulting in a point-like or string-like form which, building on a particle's ability to be in more than one place at once, may occupy all space and time.

Some well known scientists – John Wheeler, Erik Verlinde, Max Tegmark, Edward Fredkin, Melvin Vopson - suggest that information is fundamental to the physics of the universe, and that computer-generated / mathematical formulas create reality. In the case of waves being digital, the waves would not merely be described by mathematics but would literally be the result of math. A three-dimensional cube can be regarded as a reality coded on a 2D surface - in other words, the 3D cube emulates cosmology's Holographic Principle and is produced from the information in a square. The 2D square would be a nonlinear (angular) math object

resulting from adding four lines on a surface, each one being separated from those adjoining it by 90 degrees. Instead of programming a set of points to follow a straight line, they can be represented curvilinearly as a waveform and described by Fourier analysis, v=f(lambda), amplitude, wavelength or frequency, etc. In this way, the "artificial" waves are capable of being transmitted back billions of years to become the "natural" electricity and magnetism of Earth and its particles. Transmission might be achieved by a computer using tensor calculus to change the present space-time coordinates to future ones.

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