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THE UNIFIED FIELD 4-DIMENSIONAL RELATIVISTIC DIRAC EQUATION

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Albert Einstein, Lorentz and Minkowski together published the theory of special relativity in 1905 and Einstein published his Unified Field Theory of General Relativity in 1915, based on a curved 4-dimensional space-time continuum to integrate the gravitational field and the electromagnetic field in one Unified Field Theory. Since then, the method of Einstein's Unifying Field Theory has been developed by many others in more than 4 dimensions resulting finally in the well-known 10-dimensional and 11-dimensional "string theory." The original Kaluza-Klein theory was one of the first attempts to create a unified field theory. After many years of research, the 11-dimensional Super String Theory did not lead to the fundamental answers on the fundamental questions in Physics. Why do elementary particles have the exact numbers for mass, charge and spin. To find answers a new path in physics has been chosen. The path that has been based on a fundamental property in our universe is the fundamental property of equilibrium. The whole Universe is in a perfect Equilibrium. This fundamental property of Equilibrium has been extended to a 4-dimensional Hyperspace Continuum in which a perfect equilibrium persists in any of the 4 coordinate directions. The requirement of a 4-dimensional Equilibrium results in the outcome that the Dirac Equation is only one equation in a set of four equations. And that the Dirac Equation originates from an electromagnetic equation in the time-energy domain. This new 4-Dimensional Hyperspace Equilibrium Theory opens a new door to an unexplored field of mathematical and physical challenges. This theory is a new approach in physics based on a 4-Dimensional Hyperspace Equilibrium resulting in the 4-dimensional Dirac Equation. Solving these 4 simultaneous equations requires an immense computer performance and offers the possibilities to find the answers to the fundamental questions in physics within a quantum mechanical 4-Dimensional Frame-Work.

Every Physical Possible Unified Electromagnetic Field Configuration of Confinement has to be a solution of the 4-dimensional Dirac Equation in which ψ is the spinor complex wave function presentation of the electric field components $\overline{\mathrm{E}}$ and the magnetic field components $\overline{\mathrm{H}}$

$$(x_4) \quad \left(\frac{i\,m\,c}{h}\,\overline{\beta} + \overline{\alpha}\,.\,\nabla\right)\psi + \frac{1}{c}\,\frac{\partial\psi}{\partial t} = 0$$

$$\begin{pmatrix} x_3 \\ x_2 \\ x_1 \end{pmatrix} \quad -\frac{1}{c^2}\,\frac{\partial\,(\overline{\mathrm{E}} \times \overline{\mathrm{H}})}{\partial t} + \varepsilon_0\,\overline{\mathrm{E}}\,(\nabla\,.\,\overline{\mathrm{E}}) - \varepsilon_0\,\overline{\mathrm{E}} \times (\nabla \times \overline{\mathrm{E}}) + \mu_0\,\overline{\mathrm{H}}\,(\nabla\,.\,\overline{\mathrm{H}}) - \mu_0\,\overline{\mathrm{H}} \times (\nabla \times \overline{\mathrm{H}}) = \overline{0}$$

Conference on Applied Physics and Mathematics scheduled in Tokyo, Japan during October 22-23, 2018, Wim Vegt. Download the theory at: http://wimvegt.topworld.center

Biography

Wim Vegt Graduated in Electro Techniques from the Polytechnics in The Hague in the Netherlands in 1973. Afterwards, he studied Technical Physics at the Technical University Eindhoven in the Netherlands where he has graduated in 1988. During his Physics study, he was deeply motivated by the original way of thinking of Albert Einstein and his ideas about the curved 4-dimensional space-time continuum and his ideas about light. After his Graduation, he was involved in Lecturing and fundamental research at the Technical University, Eindhoven, The Netherlands. He has published papers in scientific journals like "*Physics Essays*" and French journals "*Les Annales de Louis de Broglie*". His field of expertise is the "phenomena of light" balanced in a 4-dimensional hyperspace equilibrium and his focus of research was to find the secrets behind light and the impact on quantum mechanics in a 4-dimensional hyperspace quantum mechanical frame work.

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