Gödelizing Fine Structure

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Abstract. We can measure what physicists call the Fine Structure Constant (FSC) but its fundamental origin remains a profound mystery. Bowdlerizing the original usage of the term 'Gödelization' to mean in general instead, that 'nothing can be fully understood in terms of itself'; but that one must go 'out of bounds' to obtain a holistic picture, i.e. a pollywog submersed in the sea has little hope of comprehending ocean waves without being able to understand the moon or wind. Our understanding of the physical world has progressed from Classical to Quantum; and now to the brink of the 3rd regime of the Unified Field, U_F. We present a rigorous review of 3rd regime cosmology within its current stage of development. We however suspect that 3rd regime comprehension is not quite a sufficient Gödelization to fully comprehend the FSC's fundamental origin. We therefore propose a seminal model for Gödelizing to a putative 4th Multiverse regime we believe must be sufficient. We review and discuss relevant 3rd regime properties such as an empirical protocol violating QED by producing three new spectral lines in Hydrogen. We find most interesting in terms of Occam's razor curious formulations such as $\alpha^{-1} = 4\pi^3 + \pi^2 + \pi = \left(\pi\left(4\pi^2 + \pi + 1\right)\right) = 137$. This type of π based model has been criticized because it does not come close enough to the magic number 137; but Without knowing the "accepted" probably most accurate values (considering just the 137.03… value of FSC), the following formula for the general (synchronistic) definition of the inverse fine structure constant $\alpha^{-1} = 4\pi^3 + \pi^2 + \pi^1 = \pi = \pi\left(4\pi^2 + \pi + 1\right) = 137.0363037... = \alpha^{-1}\left(\pi\right)$ was proposed by Stanbury [1]. The 2006 CODATA Recommended value is 1/137.035 999 679(94). Actually the value of *Pi* can change in non-Euclidean geometry. While the circle cannot be squared in Euclidean space, it *can* in Gauss-Bolyai-Lobachevsky Space [6]. The C/D (Circumference/Diameter) calculation in Euclidean geometry is exactly pi. But in Lobachevskian, it is greater than pi and in Riemannian, it is less than pi. It is also obvious, that from the point of view of life, the value of the FSC cannot change arbitrarily. Were its value very different, carbon atoms would not be stable and organic life, as we know it, would not be possible. This evidence increasing underlines the significance of 137 as an integer and, at the same time, as a mediator or controlling number. If alpha [the fine-structure constant] were bigger than it really is, we should not be able to distinguish matter from ether [the vacuum, nothingness], and our task to disentangle the natural laws would be hopelessly difficult. The fact however that alpha has just its value 1/137 is certainly not chance but itself a law of nature. It is clear that the explanation of this number must be the central problem of natural philosophy. We also briefly ruminate on relevant aspects of the Fibonacci Spiral, Golden Ratio, Kepler Triangle and other related symbiotic curiosities.

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