

# Regulation of the Inverse Fine-Structure Constant by its 999 Triplets

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## Abstract

The 999 triplet in the inverse fine-structure constant  $1/\alpha = 137.035999...$  probably serves as a "stop codon," which brings about that only the 137.035 part is active. In a similar manner, the 999 triplet in the square root of 137, which is 11.7046999... may serve to regulate that only the 11.7046 part of  $\sqrt{137}$  is active.

**Keywords:** Fine-structure constant, triplet code, DNA genetic code

## I. INTRODUCTION

The commonly used abbreviated expression in physics literature for the fine-structure constant  $\alpha$  ( $\alpha$ ) is  $\alpha = e^2/\hbar c$ , where  $e$  is the elementary charge,  $\hbar$  the reduced Planck constant, and  $c$  the speed of light in vacuum. Since the early 1900s, physicists have suspected that the number 137 in the inverse fine-structure constant  $1/\alpha = 137.035\ 999...$  would lay at the heart of a grand unified theory, relating theories of electromagnetism, quantum mechanics, and gravity. However, thus far, no reasonable theory was presented. Richard Feynman, one of the top investigators in this field, even suggested that all physicists should put a sign in their offices with the number 137, to remind them how much they did not know. Four years ago, it was proposed that the 137 should be read as 4 squared plus 11 squared and that these numbers 4 and 11 relate respectively to the 4 dimensions of Einstein's space-time and the 11 dimensions of M-theory [ 1 ]. More recently [ 2 ] to add to this idea, it was suggested that the 035 triplet in  $1/\alpha$ , by standing for 0.035, means a 3.5 percent visible universe, thereby indicating 96.5 percent dark energy and dark matter. The smallest uncertainty regarding  $\alpha$  comes from comparing the theoretical expression and experimental value of the anomalous magnetic moment of the electron, yielding as a value  $1/\alpha = 137.035\ 999\ 084(21)$  as reported by CODATA, NIST. See ref: [3]. However, starting in the 1980s, a new and wholly different measurement approach using the quantum Hall effect (QHE) has caused interest because the value of  $\alpha$  ( $\alpha$ ) obtained from it independently corroborates the value of  $\alpha$  from the electron magnetic moment anomaly [4,5 ]. The QHE value of  $\alpha$  does not have as little uncertainty as to the electron magnetic moment value, but it does provide with  $1/\alpha = 137.035\ 999\ 173(35)$  a significant independent confirmation of that value. Interestingly, both

methods show 137 and 035, followed by 999 in their  $1/\alpha$ , but show differences further along their  $1/\alpha$ , with 084 in the CODATA and 173 in the QHE. This suggests that the 137.035 part of the fine-structure constant exerts a specific key-like locking function, with the subsequent 999 triplets perhaps acting as a 'stop codon,' by blocking further action along the  $1/\alpha$ .

It should be pointed out that generally, the percentage visible Universe is estimated to be about four [ 6 ], so it will be interesting if a more the accurate percentage will eventually turn out to be 3.5, as used in this paper.

## II. VIRTUAL TRIANGLE

Interestingly, the 137 triple can be pictured a virtual right-angled triangle with sides  $x$ ,  $y$ , and  $z$ , so that  $x = 11$  and  $y = 4$ , with  $z$  equaling the square root of 137, which is 11.7046999. The sequence 117 046 999 contains a 999 triplet suggesting that here it acts as a stop codon, which only permits 11.7046 to express encrypted information.

## III. UNIVERSES

Since the number 137 is a Pythagorean prime number and therefore is the sum of two squares, it can be speculated that universes in a multi-universe bubble, if they exist, only are possible if their inverse fine-structure constants are Pythagorean primes, i.e., if they have  $1/\alpha$  values of about 5, 13, 17, 29, ..., 137, etc. Interestingly, there is a similarity between the fine-structure constant code and the genetic DNA code, in that both these codes consist of triplets, and that both control themselves using triplet stop codons. It seems possible that a universal mathematic code exists, which has as its part the fine-structure constant code and the DNA genetic code.

## IV. REFERENCES

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