Dirac's Irony: Is The Proton/Electron Mass Ratio a Dirac's Large Number In Disguise?

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Abstract:
The proton/electron mass ratio is a scalar. The true origin of this number might be a 24D concept, (mp/me)^24 – living in the 26D space of the 26 sporadic groups. The mass of Higgs boson (125.186 GeV) is recovered. Quark masses are related to the direct product of the 26 sporadic groups.

The proton/electron mass ratio: approximately 1836.15267343 can be thought of as (1836.15267343)^24 = 2.15680531× 10^78. 2.15680531× 10^78 proton masses (3.60751982×10^51 kg) is quite close to the weight of baryonic matter inside a local Hubble volume ("You can touch this!"). Alternatively, you can think of this fact as an approximate answer to: "How many different protons can I touch?".

In previous work, we have learned that the binding length of a string is 6.148325× 10^121 – cube root of the direct product of all 26 sporadic groups, (1836.15267343)^24 cuts that into 2.15680531× 10^78 repeating sections, each consisting of 2.850663 × 10^43 fundamental particles. As we have seen, the Wesson's mass is 1.5657×10^-68 kg. Thus the mass of each section is 4.463283× 10^-25 kg or 2× 125.186 GeV (particle and antiparticle pair). This is well within the last (summer 2023) measurement of the Higgs boson mass. This means that a Higgs boson is the length of all possible viewpoints on a ~ 1836.15267343 long section of the string in 24 dimensions.

Can we probe deeper? Yes.

Imagine the 6 quarks as a single family and extend the operation "multiplication" between them. What do we see? The Up and Down quarks have very large error bars but the four remaining quarks do not. Quark masses expressed in Wesson's mass:

Charm: ~ 1.4517×10^41
Strange: ~ 1.082×10^40
Top: ~ 1.972×10^43
Bottom: ~ 4.7595×10^41

Imagine that each end point of a string (Wesson's mass 1.5657×10^-68 kg) rides on the binding domain of a single string (6.148325× 10^121). Thus, we can see the tendency of nature to create a 2D plane (6.148325× 10^121 by 6.148325× 10^121) out of the 6 quarks and to recreate the whole direct product of sporadic groups out of attached binding domains of the strings. Now, you can get an intuition on why the quarks can't be separated. They're abstract 2D concepts!

This points to more precise mass values: Up quark is probably at the upper edge of expected value: 3.5 MeV and Down quark is at about 5.6 MeV. That is one proton contains slightly over 25 electrons worth of mass in quarks. In other words: 2 Up and 1 Down quarks are (1836.15267343...)^12 (Wesson's mass).

That is, you can imagine the 12 leptons/quarks and 12 anti-leptons/quarks as 24 points with a plane (2 axes) between them = 26.

We will investigate that later.

As a note of interest: (42.85)^24 proton mass will collapse into a black hole with volume almost equal to two classical electrons (see the section on total mass of the universe in previous paper). It seems that nature uses the proton/electron mass ratio (or its square root) in many different contexts. For example, the mass of the Higgs boson is quite close to $2\pi \times \text{sqrt}(1836.15267343)$ proton mass.

Conclusion

It seems likely that the proton/electron mass ratio has its origin in a 24 (26) dimensional concept that is linked to the direct product of the 26 sporadic simple groups.

References:

Direct Product of Sporadic Groups as a Symmetry Group of the Observable Universe at Maximum Expansion

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Measurement of the Higgs boson mass with H→γγ decays in 140 fb−1 of s√=13 TeV pp collisions with the ATLAS detector

https://arxiv.org/abs/2308.07216