

# Defining Particles 2

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## Abstract

We define particles as pictures.

### 1. Defining a Pi-minus

The circles of a pi-minus are arranged as follows:

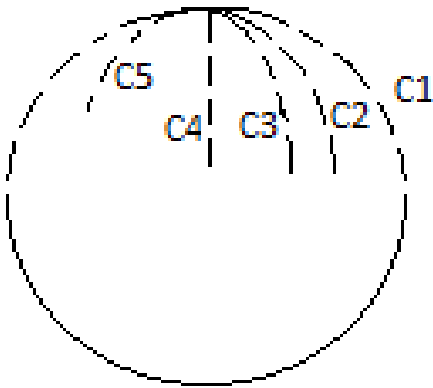


Figure 1.1

where the  $C_n$  are circles on the "sphere" (Riemann sphere-anti sphere: RSS) where the charges are encoded into. These circles go around the RSS and a charge on each gets duplicated symmetrically (so each one counts half the charge) so that there is balanced forces on the particle.

The d quark is the southern hemisphere of the particle and the anti-up quark is the northern hemisphere. The momentum vector is orthogonal to the plane where the mass charges are encoded onto.

Each circle on the RS looks like:

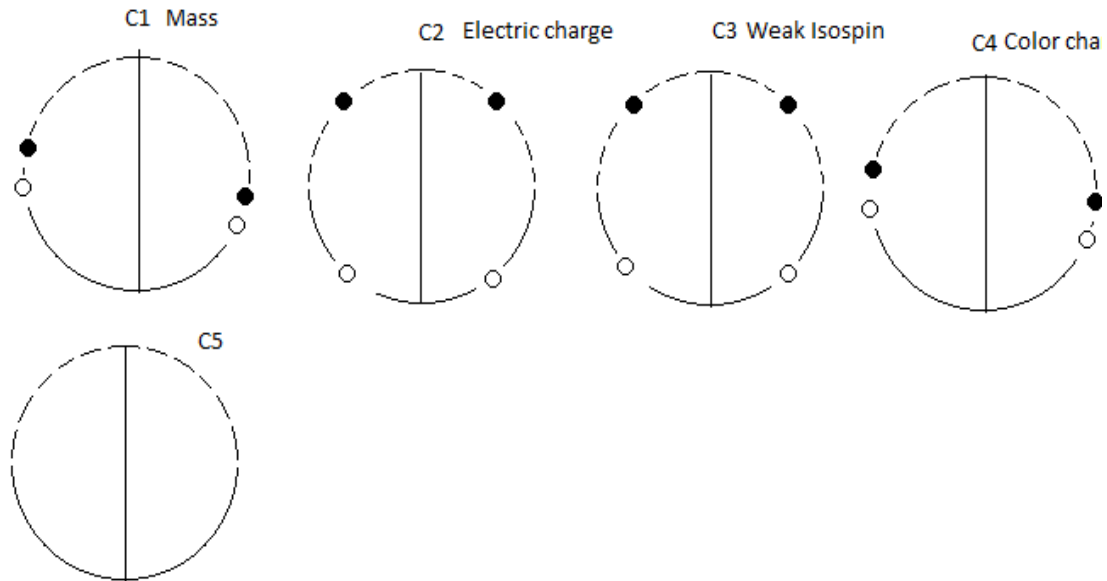


Figure 1.2

The dotted half circles represent half circles on the half anti-Riemann sphere (ARS: a Riemann half sphere made of holes in spacetime). The solid half circles represent half circles on a half Riemann sphere. The little filled circles represent added events of spacetime and the little circles represent holes in spacetime.

The quarks form a northern and southern area of the RSS but they extend into each other when the plane of the mass and color charges change. The opposite color and mass charges keep the particle together. The dotted circles are circles of an anti-quark and the solid lines are circles of a quark.

## 2. Defining Electrons.

I allow the charges to circle around the RSS to allow for the electron looking the same only after  $4\pi$  rotations.

The electron picture follows from the pi-minus picture.

An electron looks like:

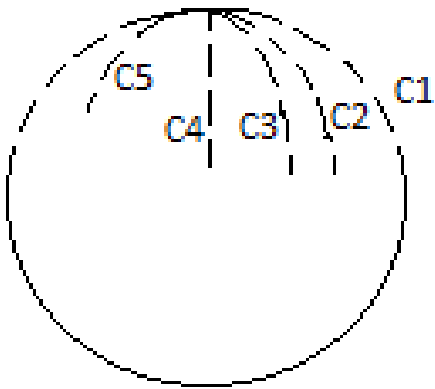


Figure 2.1

The circles on the RS looks like:

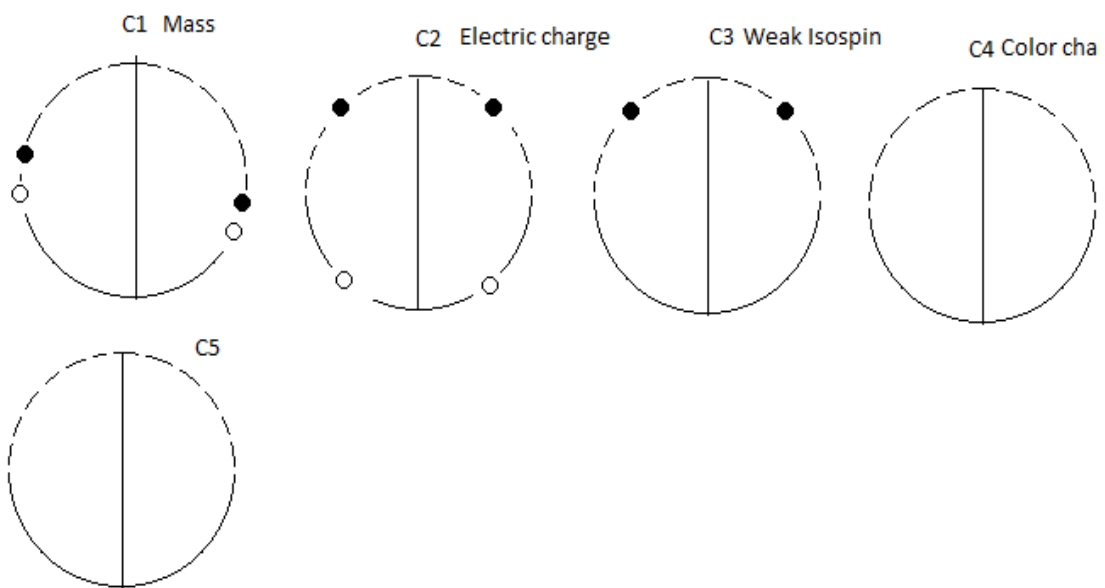


Figure 2.2

### 3. Defining Electron Anti-neutrinos

An electron antineutrino follows from the picture for a pi-minus. It looks like:

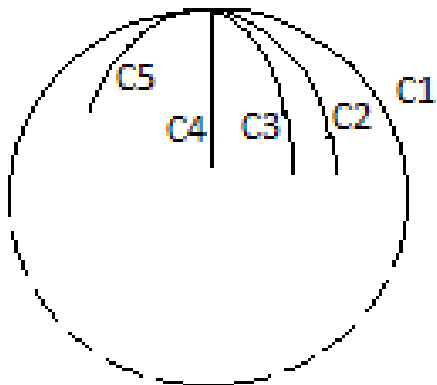


Figure 3.1

The circles of the electron antineutrino looks as follows:

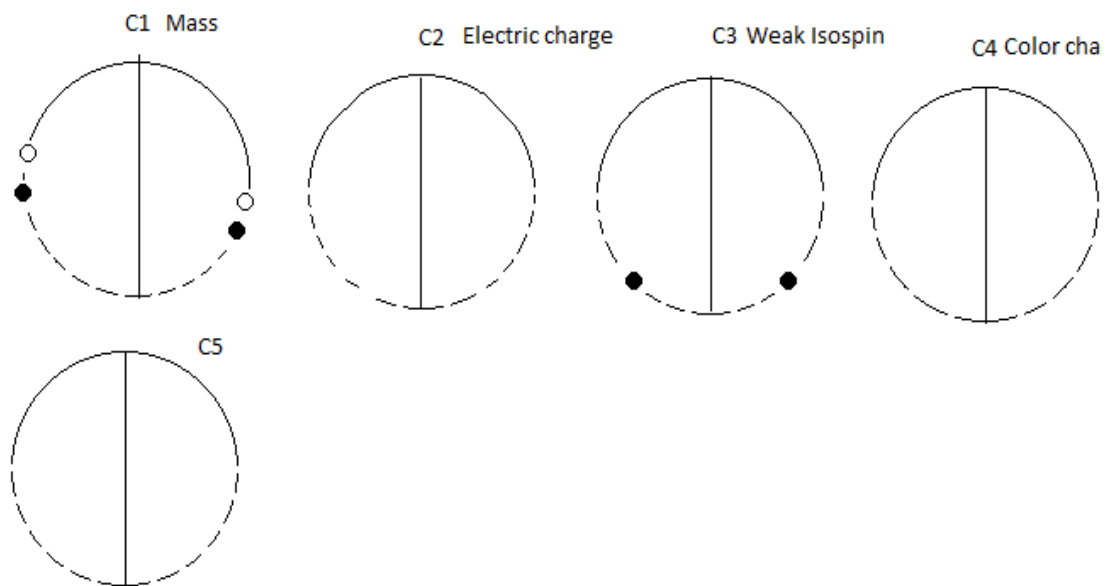


Figure 3.2

#### 4. Defining protons.

The two up quarks are like cups, one inside the other, and the down quark couples to a gluon that is bound to the area halfway between the two up quarks on the equator where the two "cups" end. See figure 4.1.

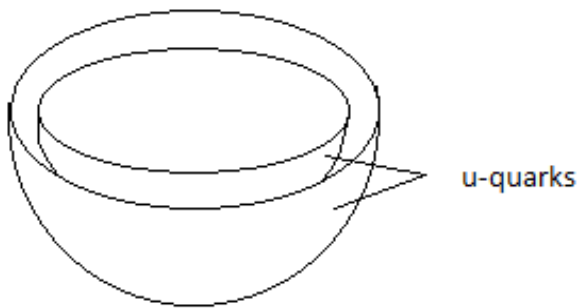


Figure 4.1

The down quark sits atop of this with its equator halfway between the two up quarks. Three gluons fill the space at the equator (as rings) and their intersection would make two triangles.

#### Bibliography

[1] Esterhuyse W. F., Physics from Axioms, JOURNAL OF ADVANCES IN PHYSICS, 16(1), 326-334. <https://doi.org/10.24297/jap.v16i1.8382>

[2] Carroll, S. Black holes and Firewalls. <https://www.youtube.com/watch?v=8bhtEg88Mo>. Time stamp: 34:18. Internet.