CASSIOPEIA'S ToE

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QCD
(Quantum Chromo Dynamics)

QUARKS
In the wormhole view, a quark produces a stable but dynamic arrangement of wormholes in its home field as well as crossover wormholes to THREE other Fields. One of these crossover wormholes connects to a space quantum in the Gravity Field, one connects to the Strong Field, and the third connects to the Electroweak Field like the electrons. These three crossover wormholes are the gateways for the particle to participate in Interactions involving Gravity, the Strong, and EW Interactions.

Similar to the topology for the electron, the space quantum at the end of the E-W connection then has another extension, which separates the Electromagnetic Field and the Higgs-Weak Field. This extension breaks the Weak connection for the primary wormhole. So now, the Quark's three primary wormholes are to the Gravity Field, the Strong Field, and what is now the Electromagnetic Field (EM). The Higgs-Weak Field is an extension beyond the EM Field with another crossover wormhole. This arrangement is dynamic in that it is not localized. We will represent it constantly moving across the range defined by its wave function.

Inside the EM Field, the Gravity Field, the Strong Field, and the Weak-Higgs Field, virtual bosons radiate out in the pattern required by the interaction patterns. In their simplest form they are radial fields lines. And each line is a gauge boson wormhole. But in the Strong Field, the gluons create additional field lines, so the field grows stronger as it radiates away from the central point.

Back to the crossover wormholes, these wormholes represent the excitations of the fermion field – in this case, the quark field. These crossover wormholes have a one-way direction, a color charge, and electric charge, a Weak Isospin charge, and a spin characteristic. This is where CPT transformations affect the characteristics of the wormhole (of the particle).

In the case of Quarks, there will always be three of them to represent baryons, or two of them – one being an antiquark – to represent mesons. And each type of quark has its own home field. There is an up-quark field and a down-quark field

We can represent these three (2 ups and a down for example) as being somehow enveloped inside the gluon field rather than being independent. And it

would be nice if we could represent the trio as if they appear to be a composite proton (or neutron) field.