A Cyclic-Time Universe Based on E8-Symmetric Fermibosonic Mass Transfer Entities Can Explain the Origin of the Mass of the Higgs Boson

George R. Briggs

Abstract: A major unexplained problem remaining with the Higgs boson is explaining where its own mass comes from. The problem is immediately solved if one assumes that the mass came from a previous universe of a cyclic-time type already proposed. In this design, there is an epoch preceding each big bang in which time is inactive and the universe is physically prepared to transfer all its mass (both fermionic and bosonic) to the next universe (the universes remain in the same location). The actual transfer starts to take place soon after time is turned on again (and when the big bang occurs). The details of this transfer and of the formation of the big bang are presented in an earlier paper by the author (viXra 1310.0261).

The author describes three new forces of nature that obey E8 symmetry and are only active when time is inactive[1]. The prior universe before the big bang was of this nature and utilized Fermibosonic[2] entities of cosmic scale to transfer matter to the new, present universe without violating flatness requirements. There are two types of these entities, Briggs type A fermibosons, made up of spin 1 bosons and spin 1\2 fermions in a supersymmetric partner pair organization, to transfer W+, W- and Wo weak force massive particles, and Briggs type B fermibosons, made up of spin 0 bosons and spin 1\2 fermions in a partner pair design to transfer the 8 fundamental, stable ordinary matter particles (hadronic quarks and leptons). The type B fermibosons thus contain the massive spin 0 Higgs bosons which transferred from the previous universe. This explains when the mass[3] of the Higgs arose in the present universe. Where the mass came in can also be determined. It was where the gravity of huge black holes tore the type B fermibosons apart near the centers of spiral galaxies. The black holes themselves arose earlier after the type A fermiboson transfer when the radiation heat of the big bang disintegrated the transferred type A entities, forming compact ordinary matter black holes and hot weak matter concentrations (likely quasars and Seyfert galaxies were involved).

Transfer of bosonic and fermionic matter from a prior universe etc., as described, means that the matter itself is very long-lived, in fact immortal as far as living beings are concerned. This is true for both the Higgs particles and the Higgs scalar field, which is the one scalar field which represents the scalar sum of the 8 stable fundamental hadronic (2) particles and leptonic (2) particles and their antiparticles. This means that the Higgs scalar field was in place many universes in the past, and did not arise during our present universe's epoch.

At the present time there is discussion concerning the role of Einstein-Bose condensates in symmetry-breaking leading to formation of Higgs particles and fields[4]. When the symmetry-breaking occurred is entirely unknown at this time. No other symmetry-breaking besides that of electro-weak can be identified in the early universe. Because our work indicates the Higgs components formed very long ago, this question is felt to be premature. The present, more important question is what is the role of E8 symmetry in the formation of fermibosonic entities?.

The idea of a single universe that cycles over and over again is very appealing because it yields a very consistent explanation for entropy (see reference 1). The all-important fermibosonic entities are not particles, which would violate quantum mechanical principles but are much larger, of cosmic scale: each entity containing untold numbers of particles, with the entity being held together by supersymmetric partner-pair forces of E8 symmetry type.

The 0-spin constituents of the type B fermibosons are separated from their confining cosmic scale entities by the formation of spiral galaxies and then contribute to the formation of dark energy. There is one 0-spin component for each of the 8 fundamental stable particles, or 8 Higgs particles in all. However, because of the scalar nature of the 8 Higgs fields, the 8 fields act like one field to an observer, and we observe only one Higgs particle as a result.

As pointed out in my previous paper, the 8-fold SU(3) symmetry force approach to the evolution of the universe leads to an E8 symmetrical representation for all 248 particles of a revised Standard Model[5]. This conclusion remains valid after inclusion of some rearrangement necessitated by inclusion of the Higgs particle, remembering that the one Higgs particle replaces 8 dark energy spin 0 particles in the original calculation. My work contains no dark matter particle entities whatsoever.

1. Roger Penrose, "Cycles of Time", Alfred A. Knopf (2011)

2. A. Garrett Lisi and James Owen Weatherall, "A Geometric Theory of Everything", pp. 54-61, Scientific American, Dec., (2010)

3. Leon M. Lederman and Christopher T. Hill, "Beyond the God Particle", p. 277, Prometheus Books, (2013)

4. Joseph Lykken and Maria Spiropulu, "The Future of the Higgs Boson", Physics Today, December, (2013)

5. A. Garrett Lisi, "An Exceptionally Simple Theory of Everything", Wikipedia, the free encyclopedia, (2007)