

Abstract Submitted
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GEMS (Gravity Electro-Magnetism Strong) SU(5) Theory and The Prediction of Exchange Boson Masses JOHN BRANDENBURG, Morningstar Applied Physics LLC, MORNINGSTAR APPLIED PHYSICS TEAM — The GEMS SU(5) [1] theory includes short range Nuclear Forces in the GEM unification theory [2], where the importance of the square root of the proton-electron mass ratio: $\sigma = 42.8503$ was found. The creation of mass by a Higgs field coupling must, by the Equivalence Principle, be viewed in the context of General Relativity. This is done here using Kaluza-Klein theory in a Feynman-Hawking path integral formalism. GEM theory, quantum concepts of virtual particles, and ZPF (Zero Point Fluctuation) allow understanding of the Strong Force and Weak forces as the extension of electrodynamics in the quantum limit. The Strong and Weak forces are found to be associated with EM models of the electron and proton as finite sized structures respectively. Higher order Mie resonances off the EM “mass at a distance” structures associated with the electron, proton and fifth dimension generate the quanta with masses of the pion $m_\pi = 2 m_e / \alpha \cong 140.0$ MeV and Z boson: $m_Z = 2\sigma m_p = 80.4$ GeV. The η_c meson $m_\eta = 2980$ GeV is identified with the 5th dimension compactification force mediated by the Radion field. Another particle associated with this mass inducing field is the “Radion” or Higgs scattering quanta off the fifth dimension with a mass $\sigma m_\eta \cong 128.6$ GeV which is the Higgs Boson. A GEMS SU(5) Georgi-Glashow model, is proposed, where the unification energy is now the Planck energy.

[1] Brandenburg, J.E. (2012)., STAIF II Conference Albuquerque NM

[2] Brandenburg, J.E. (2007). IEEE Transactions On Plasma Science, Vol. 35, No. 4., p845.

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