Abstract Submitted
for the APR05 Meeting of
The American Physical Society

Topology of Electroweak QDMs DILLON SCOFIELD, Dept. of Physics, Oklahoma State Univ./ApplSci, Inc. — Quantum dynamical manifolds (QDMs) are solutions of the quantum dynamical manifold equations (QDMEs) describing mass-spacetimes having specified internal color, gauge, and flavor symmetry. The electron momentum-space manifold (k-space representation of the color Lie algebra $su(2)$ QDM) is topologically orientable, being topologically equivalent to an S^2-sphere, and the photon k-space manifolds are not orientable being equivalent to a Klein bottle, K^2. A "new" kind of particle having non vanishing mass-parameter is found. As this parameter vanishes it represents the Dirac neutrino. Because of the dimension of the color algebra is three, when including many-body spacetime effects, there are *exactly* three leptons and lepton neutrinos. By examining the topology of the new neutrino solutions in k-space, an argument for the existence of only left-handed neutrinos is found. These neutrino manifolds are topologically equivalent to the 2D projective space, $R\mathrm{P}^2$. Tentative vector boson $(W^+, Z^0(\bar{Z}^0), W^-)$ solutions to 3D $su(2)$ representation color algebra symmetric, 3D $SU(2)$ representation flavor group symmetric QDMEs contain the T^2 torus manifold. Together the electrons (S^2), neutrinos ($R\mathrm{P}^2 : S^2 \# R\mathrm{P}^2$), photons ($K^2 : S^2 \# R\mathrm{P}^2 \# R\mathrm{P}^2$) and the vector bosons (T^2) form a topological semigroup (S^2, T^2, $R\mathrm{P}^2$, #) under the topological connected sum (#). Thus k-space representations of electroweak particles can be joined describing interacting electroweak manifolds.

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Date submitted: 14 Jan 2005 Electronic form version 1.4