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A Simple Extension of EW Gauge Boson Mixing and Mass of the 125 GeV Higgs Boson[1] THOMAS WARD, Techsource Incorporated, 20251 Century Blvd., Suite 440, Germantown, MD 20874 — A simple extension of EW gauge theory found within the framework of the SM mixes the Yang-Mills (Y-M) field with the vector (Weak and EM), scalar (Higgs), and tensor gauge fields resulting in a model prediction of a Higgs mass spectrum that includes the recently discovered 125 GeV particle. The key feature is the use of coupled Y-M gauge fields (B_μ) whose quanta are spin $J_\mu = 0, 1, 2$ and isotopic spin $I_3 = 0$ mixing off-diagonally with the neutral Higgs, Z, photon and tensor gauge fields. The tensor algebra is associated with a unimodular 4x4 integral matrix with even (vector) and odd (scalar and tensor) 2x2 matrix subspace components. The predicted Higgs spectrum consists of neutral scalar ($J^\pi_\mu = 0^+, I_3 = 0$) and pseudoscalar ($J^\pi_\mu = 0^-, I_3 = 0$) particles whose QCD quark-antiquark ($\bar{u}t, \bar{c}t, \bar{t}t$) wavefunctions are combinations of a scalar Higgs color magnetic triplet *(sp quarks)* and a pseudoscalar Higgs color magnetic singlet *(ss quarks)*. The two lowest lying Higgs scalar particles are predicted to be 124.05 GeV ($\bar{u}t$) and 125.30 GeV($\bar{c}t$). The predicted Higgs scalar and pseudoscalar mass spectra will be presented and discussed.

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