

Abstract Submitted  
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**The Standard Model and an extension of color** RICHARD HOLMES, Boeing, Inc. — Color, involving three states, red, green, and blue, plays a key role in quantum chromodynamics (QCD). A class of  $3 \times 3$  Hamiltonian matrices are investigated that yield solutions that are isomorphic to the conventional color and anti-color states. Specific Hamiltonians are found via a 2-parameter search; the eigenvalues correspond with high accuracy to the measured or inferred masses of each of the 3 flavors of the two quark families of particle. The same eigenvectors apply to both quark families for each flavor generation. It is found that the same approach can be applied for the particle masses of the two lepton families. The masses of the different families arise as an orderly function of two search parameters. The incorporation of this extension of color into the Standard Model is discussed, with some interesting consequences.

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