Abstract Submitted
for the APR05 Meeting of
The American Physical Society

Higgs mass from extended spin model JAIME BESPROSVANY, JOS LUIS FLORES, Instituto de Física, UNAM — Unification ideas motivate the formulation of field equations on an extended matrix-spin space. Demanding that the Poincare symmetry be maintained, one derives scalar symmetries that are associated with flavor and gauge groups. Boson and fermion solutions are obtained with a fixed representation. A field theory can be equivalently written and interpreted in terms of elements of such a space and is similarly constrained. At 5 + 1 dimensions, one obtains isospin and hypercharge SU(2)L X U(1) symmetries, their vector carriers, two-flavor charged and chargeless leptons, and scalar particles. Mass terms produce breaking of the symmetry to an electromagnetic U(1), a Weinberg's angle with sin2(th_W) = 0.25, and additional information on the respective coupling constants. The particles' underlying spin symmetry gives information on their masses; one reproduces the Standard Model ratio MZ/MW, and predicts possible Higgs masses of MH $\sim$ 114 and MH $\sim$ 161 GeV, at tree level. The more accurate (9+1)-dimensional extension is also considered.

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Date submitted: 18 Jan 2005 Electronic form version 1.4