

# Relating quarks and leptons without unification

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We propose a supersymmetric extension of the standard model based on the flavor symmetry  $A_4$ . Charged fermion masses arise from renormalizable Yukawa couplings while neutrino masses are generated by the usual dimension five operator. We show that by a suitable choice of the soft breaking terms one can reproduce all fermion mass hierarchies, predicting a mass formula relating down quarks and charged lepton masses, and also reproduce the Cabibbo angle in the quark sector.

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