

QUARK MASSES AND CABIBBO ANGLES IN AN $SU(2)_L \times SU(2)_R \times U(1)$
GAUGE MODEL WITH PERMUTATION SYMMETRY*

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Unified theories of weak and electromagnetic interactions contain masses of quarks and leptons as free parameters. The same is true of the generalized Cabibbo angles which mix different generations of quarks. It is possible to calculate these angles from perturbative corrections. However, such an approach suffers from some difficulties, as was mentioned by Weinberg. Another possibility is to determine the masses of quarks and leptons from the properties of the mass matrix. In particular, several authors have investigated consequences of imposing various discrete symmetries on the Higgs quark coupling.

An $SU(2)_L \times SU(2)_R \times U(1)$ model with the discrete symmetry $S_{NL} \times S_{NR}$ is generalized to a higher number of quark doublets. The stability of the results on the number (N) of doublets is discussed. The mass pattern is obtained for general N . The generalized Cabibbo matrix can be determined up to one parameter for $N=5$. The deviation from the Cabibbo universality is found to be sensitive to N .

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