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Electroweak Interaction in SU(2) X U(1) Left-Right Symmetrical Model

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The $SU(2) \bigotimes U(1)$ gauge model unifying
the electromagnetic and weak interactions, which is initially free of the auxiliary self-interaction scalar field, is developed. We narrow the initial symmetry up to $SU_L(2) \bigotimes U_R(1)$ by eliminating the right neutrinos current from the Lagrangian by means of the bosonization of this current into the $SU(2)$ current of the charged scalar field that leads to the $SU_L(2) \bigotimes U_R(1)$ gauge invariant Lagrangian containing the arbitrary $SU(2)$ invariant charged scalar field. The interaction of such a field with leptons and gauge fields provides them with the required masses, and mixes the lepton families under spontaneous breaking the symmetry of the scalar field. The obtained Pontecorvo-Maki-Nakagawa-Sakata matrix elements is entirely governed by both the coupling constant of leptons with the scalar field and the parameters of the spontaneously arisen vacuum.

Summary

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