model, are instead grouped into a weak SU(2) doublet. In this example the charged current is

$$j_\mu = \bar{p}_L \gamma_\mu n_L^c + \bar{p}'_L \gamma_\mu \lambda_L^c + \bar{p}'_R \gamma_\mu n_R \quad ,$$

where $n^c = n \cos\theta_c + \lambda \sin\theta_c$, $\lambda^c = \lambda \cos\theta_c - n \sin\theta_c$, with θ_c the Cabibbo angle; and where the subscripts L and R refer to left and right-handed helicity projections. The last term is absent in the standard model.

The K_L-K_S mass difference is determined by diagrams involving a pair of W boson exchanges. The potentially dangerous contributions arise from the domain of large boson momenta, of order M_W; we deal with this by looking for an effective Lagrangian that describes the process $n + n \to \lambda + \lambda$ in the approximation that the strong interactions are switched off at large momenta. To within logarithmic corrections, this is in the spirit of asymptotic freedom provided M_W and $m_{p'}$ are large compared to typical hadronic masses (we assume $M_W >> m_{p'}$ and $m_{p'} >> m_p$). With the strong interactions switched off there are two diagrams to be considered, as shown in Figs. 1a and 1b. It is only Fig. 1a, where vertices involve exclusively left-handed currents, that enters into the standard model; Fig. 1b involves both left- and right-handed currents. The effective Lagrangian is computed to lowest order in $m_{p'}/M_W$.

For the left-left case the computation has been carried out by Gaillard and Lee, who find