

On the Mixed Propagator Approach to ρ - ω Mixing

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Abstract: The mixed propagator (MP) approach to ρ - ω mixing is discussed. It is found that under the pole-approximation assumption the results of MP approach is not compatible both with the effective Lagrangian theory and with the experiment measurement criterion. To overcome these inconsistent, we propose a new MP approach in which the physical states of ρ and ω are determined by the requirement of experimental measurement to meson resonance. In terms of this new MP approach, the EM pion form factor F_π and form factors of $\rho^0 \rightarrow \pi^0 \gamma$ and of $\omega \rightarrow \pi^0 \gamma$ are derived. The results of F_π are in good agreement with data. The form factor of $\rho^0 \rightarrow \pi^0 \gamma$ exhibits a hidden charge-asymmetry enhancement effect which agrees with the prediction of the effective Lagrangian theory.

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