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The omega-rho-pi coupling and the influence of heavier resonances

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Abstract content

We determine the value of the $\omega - \rho - \pi$ mesons coupling ($g_{\omega\rho\pi}$), in the context of the vector meson dominance model, from radiative decays, the $\omega \to 3\pi$ decay width and the $e^+e^- \to 3\pi$ cross section. For the last two observables we consider the presence of a contact term as mimicked by a heavier resonance ($\rho'(1450)$) and find its magnitude to be close to other approaches. A weighted average of the results from the set of observables yields $g_{\omega\rho\pi} = 13.8 \pm 0.1$ ($g_{\omega\rho\pi} = 11.6 \pm 0.2$) without (with) contact term. Improved measurements of these observables and the $\rho'(1450)$ meson parameters are needed to give a definite answer on the pertinence of the inclusion of this last one in the considered processes.

Summary

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