

High Energy Physics - Experiment

Measurements of CP-conserving Trilinear Gauge Boson Couplings WWV ($V = \gamma, Z$) in e^+e^- Collisions at LEP2

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The data taken by DELPHI at centre-of-mass energies between 189 and 209 GeV are used to place limits on the CP-conserving trilinear gauge boson couplings Δ_{g1z} , λ_{γ} and $\Delta_{\kappa_{\text{ppg}}}$ associated to $W+W^-$ and single W production at LEP2. Using data from the $jjlv$, $jjjj$, jjX and lX final states, where j , l and X represent a jet, a lepton and missing four-momentum, respectively, the following limits are set on the couplings when one parameter is allowed to vary and the others are set to their Standard Model values of zero:

$\Delta_{g1z} = -0.025^{+0.033}_{-0.030}$, $\lambda_{\gamma} = 0.002^{+0.035}_{-0.035}$ and $\Delta_{\kappa_{\text{ppg}}} = 0.024^{+0.077}_{-0.081}$.

Results are also presented when two or three parameters are allowed to vary. All observations are consistent with the predictions of the Standard Model and supersede the previous results on these gauge coupling parameters published by DELPHI.

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