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Constraining anomalous gauge boson couplings in $e^+e^- \to W^+W^-$ using polarization asymmetries with polarized beams RAFIQUL RAHAMAN[1], RITESH K. SINGH[2], IISER Kolkata — We study the anomalous W^+W^-V ($V = \gamma, Z$) couplings in $e^+e^- \to W^+W^-$ using the complete set of polarization observables of W boson with longitudinally polarized beams. We use most general Lorentz invariant form factors parametrization as well as $SU(2) \times U(1)$ invariant dimension 6 effective operators for the effective W^+W^-V couplings. We estimate simultaneous limits on the anomalous couplings in both the parametrization using cross section, forward backward asymmetry and polarization observables of W boson with different kinematical cuts using Markov-Chain–Monte-Carlo (MCMC) method for an e^+e^- collider running at centre of mass energy of $\sqrt{s} = 500$ GeV and $\mathcal{L} = 100$ fb^{-1}. The best limits on form factors are obtained to be $1 \sim 5 \times 10^{-2}$ for e^- and e^+ polarization being $(+0.4, -0.4)$. For operator's coefficients, the best limits are obtained to be $1 \sim 16$ TeV^{-2}.

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