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Probing dimension-six Higgs couplings at future e^+e^- colliders.

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We study the process $e^+e^- \rightarrow \ell^+\ell^-h (b\bar{b})$ considering centre-of-mass energies $\sqrt{s} = \{250, 1000, 3000\}$ GeV using resolved- and boosted-analysis techniques to reconstruct the Higgs boson. We show that this process probes the tensor structure of the $hZZ^*/hZ\bar{f}f$ couplings via Higgs-strahlung and Z -boson fusion in the dimension-six Standard Model Effective Field Theory (SMEFT). Upon exploiting the interplay between the sensitivity of high-energy e^+e^- colliders and beam polarisation, we obtain projected bounds for the tensor structures of the Higgs couplings to Z -bosons by the use of total rates and differential distributions with respect to energy variables, which complement the existing constraints by the Z -pole and diboson measurements at LEP.

Time Zone

Europe/Africa/Middle East

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