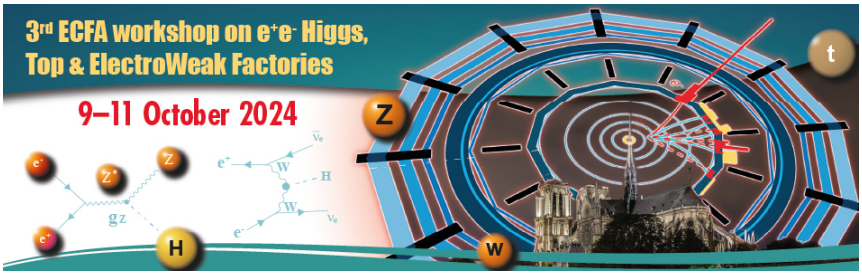

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Prospects for New Discoveries Through Precision Measurements at e+e- Colliders

Thursday 10 October 2024 11:40 (20 minutes)

We systematically study potential effects of BSM physics in the $e^+e^- \to ZH$ process. To this end, we include all relevant dimension-6 Standard Model Effective Field Theory operators and work to next-to-leading order (NLO) accuracy in the electro-weak coupling. We consider both polarized and unpolarized electron and positron beams and present results for $\sqrt{s} = 240, 365$ and 500 GeV and emphasize observables where the NLO predictions differ significantly from the leading order (LO) results. At NLO, a sensitivity arises to operators that do not contribute at tree level, such as the Higgs trilinear coupling , CP violating operators, dimension-6 operators involving the top quark or anomalous Higgs-Z boson couplings, among many others. We compare the prospects of future e^+e^- colliders to explore these new physics effects with measurements from the LHC, electron EDMs (for CP violating operators), and Z pole measurements.

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