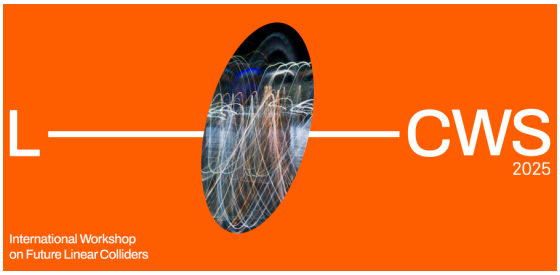

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Determining Triple Gauge Boson Couplings at 250 GeV Higgs Factories

Tuesday 21 October 2025 10:30 (18 minutes)

Determining Triple Gauge Boson Couplings at 250 GeV Higgs Factories

We study the extraction of (anomalous) $ZWW/\gamma WW$ triple gauge couplings (aTGC) in the $e^+e^- \to \ell\nu q\bar{q}$ process at 250 GeV from full simulation and reconstruction with the ILD detector.
Determining aTGC at the sub-permille level is vital for the precise and consistent determination of Higgs couplings in global fits and adds important constraints on SMEFT, scrutinising the electroweak gauge symmetry.
We perform a modified optimal observable analysis, combining the classical approach with elements from modern binned maximum likelihood fits, enabling the consistent study of systematic errors and straightforward inclusion of external constraints.
By using the Key4hep software ecosystem, the analysis is performed in a reusable way, easily extendable to other detector and machine configurations.

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