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The electro-weak couplings of the top quark: current constraints, prospects and impact in a combined top-Higgs EFT fit

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The electro-weak couplings of the top and bottom quarks are sensitive probes of new physics. Especially the former were very poorly constrained until recently. We derive limits on the relevant Wilson coefficients of the Standard Model Effective Field Theory using ATLAS and CMS data on associated top quark production, single top-quark production and top decay, and LEP data on the Zbb vertex. These bounds are compared to the prospects of the High-Luminosity phase of the LHC and a future electron-positron collider operated above the top-quark pair-production threshold. Finally, we assess the interplay between Higgs and EW precision measurements and the top quark.

Secondary track (number)

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