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## The top quark EW couplings in the SMEFT

*Tuesday 9 July 2024 11:00 (20 minutes)*

The electro-weak couplings of the top quark are directly accessible in rare “top+X” production processes at the LHC, where top quark pairs or single top quark are produced in associations with bosons. We present a new analysis of the top sector of the Standard Model EFT. The fit is based on a fully NLO parameterization and includes the most recent (differential) results from ATLAS and CMS. We show that run 2 of the LHC allows, for the first time, to overconstrain the  $q\bar{q}t\bar{t}$  and two-fermion operator coefficients and yields competitive bounds. We compare the current bounds to projections for the HL-LHC and future lepton colliders, that can yield powerful constraints.

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