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NLO predictions for SM EFT in the top-quark sector (15' + 5')

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The standard model (SM) effective field theory (EFT) is a powerful
approach to the SM deviations, where predictions can be systematically
improved in precision. I will discuss some recent progresses and
ongoing efforts in developing the SM EFT to next-to-leading order
(NLO) accuracy, in particular in the top-quark sector. Based on the
MadGraph5_aMC@NLO framework, one can start from an EFT with top-quark
operators, and make NLO predictions for various processes, for cross
sections as well as distributions, in a fully automatic way.
Furthermore, NLO results matched to the parton shower simulation are
available, allowing for event generation to be directly employed in an
experimental analyses. These works provide a solid basis for the
interpretation of current and future measurements in the EFT
framework, with improved accuracy and precision. Dedicated
investigations of the features of deviations from the SM can be
performed based on the presented works, with an expected improvement
in sensitivity.

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