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Correlating uncertainties within the SMEFT

Friday 17 April 2020 12:00 (30 minutes)

We investigate the impact of correlations between (theoretical and experimental) uncertainties on multi-experiment, multi-observable analyses within the Standard Model Effective Field Theory (SMEFT). To do so, we perform a model-independent analysis of t-channel single top-quark production and top-quark decay data from ATLAS, CMS, CDF and D0. We show quantitatively how the fit changes when different experimental or theoretical correlations are assumed. Assuming no correlations returns a fit in agreement with the Standard Model while a 'best guess'-ansatz taking into account correlations would show deviations from the SM. At the same time, modelling the impact of higher order SMEFT-corrections the latter turn out to be a subleading source of uncertainty only.

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