

Systematic matching of simple UV models for SMEFT global fits

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There is an increased effort to perform global fits of current experimental results in order to find signs of New Physics. The Standard Model Effective Field Theory has become the leading framework for these efforts thanks to offering a theoretically consistent and mostly model-independent way to parameterize deviations from the SM. More recent studies aim at interpreting the results of such global EFT fits in terms of specific UV models. Here, I'll present ongoing efforts towards the systematic implementation of UV complete models in the SMEFT global analysis framework. We obtain constraints by matching all possible 1-particle extensions of the SM with spin smaller or equal than 1 to the SMEFT. We study both tree-level and 1-loop matching and discuss the impact and subtleties of the latter. We also discuss the statistical interpretation of the resulting posterior distributions in the UV couplings and the impact of flavour assumptions.

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