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Automatic generation of EFT operators

Wednesday, 14 September 2022 11:00 (45 minutes)

Effective field theories (EFTs) are a powerful tool for the exploration of potential new physics in a model-independent way. At a time when there is a lack of clarity on how to extend the Standard Model, the Standard Model effective field theory (SMEFT) and related EFTs have been receiving an increasing amount of attention. For example, the number of SMEFT operators, up to high mass dimensions, has been counted with several techniques in the last few years. Building an explicit basis of operators is more complicated, but here too there has been notable progress. In this talk, I will go through my recent work on using the software packages GroupMath and Sym2Int to automatically build explicit bases of operators for EFTs, given their fields and symmetries.

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