

7th IDPASC/LIP PhD Students Workshop



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Extending the SMEFT

Thursday, 7 July 2022 16:40 (10 minutes)

The lack of evidence of new physics so far leads us to pursue the model-independent approach encoded in the Standard Model Effective Field Theory (SMEFT). In this talk I will go over certain directions in which to extend our predictions within the SMEFT. Firstly by considering the contribution of dimension-8 terms; these terms are important not only from the experimental point of view, since certain observables receive their main contribution at this order, but also because dimension-8 Wilson coefficients are the first ones on which purely theoretical bounds can be placed. Furthermore, we consider the extension of the SMEFT with an extra light pseudo-scalar, a motivated scenario within composite Higgs models. Finally, we use the SMEFT approach to connect experimental results with particular Standard Model extensions by classifying models which can generate the effective operators possibly responsible for the anomalous magnetic moment of the muon.

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