Contribution ID: **10** Type: **Parallel Session Talk**

Discrete Leptonic Flavor Symmetries in the SMEFT

Wednesday, December 4, 2024 6:00 PM (15 minutes)

Standard Model effective field theory (SMEFT) serves as a powerful and rigorous framework for systematically characterizing deviations from the Standard Model. However, due to its model-independent nature, there is an inevitable trade-off resulting in a significant increase in the number of independent parameters. In this talk, we discuss the charting of the SMEFT parameter space by incorporating a range of flavor assumptions based on the global continuous symmetry groups. The interplay between the flavor symmetries and the UV mediators, yielding valuable phenomenological insights, is outlined accordingly. Expanding upon this analysis, we extend the list of flavor symmetries in the leptonic sector by adding three well-motivated discrete groups, namely A_4, A_5, and S_4. The analysis of the relevant UV mediators under these flavor assumptions is performed, which includes the extraction of flavor tensors as well as the derivation of SMEFT matching relations. Particular emphasis is placed on the leptonic directions, for which a comprehensive phenomenological analysis is conducted.

Author: PALAVRIC, Ajdin (University of Basel)

Presenter: PALAVRIC, Ajdin (University of Basel)

Session Classification: Theoretical Developments 2

Track Classification: Parallel track