Contribution ID: **16** Type: **not specified**

Precision tests of the Standard Model in global SMEFT analyses: Fitting with a CLEW

Wednesday, October 18, 2023 3:00 PM (30 minutes)

Recent examinations of the semileptonic charged-current have underscored discrepancies with the Standard Model, particularly in the Cabibbo Angle Anomaly, which demonstrates a 3-sigma deviation. We undertake a rigorous analysis using SMEFT to shed light on potential BSM sources of the Cabibbo anomaly. By integrating Collider processes, Low-energy processes, and EWPO, we establish a holistic CLEW framework, dedicated to a flavor-assumption-independent analysis sidelining severe phenomenological constraints. We have also incorporated the Akaike Information Criterion, which promotes a model that not only aligns well with experimental data but also circumvents unnecessary complexities, accentuating the challenges and prospective avenues for model-independent global analyses.

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Session Classification: Young Scientists Talks