

## Froggatt-Nielsen Models Meet SMEFT

*Thursday 13 June 2024 11:50 (10 minutes)*

The Froggatt-Nielsen (FN) mechanism is one of the oldest and simplest attempts at explaining the striking hierarchies observed in the fermion masses and mixings. Given that FN models give rise to the correct fermion masses and mixings by construction and that the new particles predicted by the models are typically assumed to be heavy, it is not clear if the models are experimentally falsifiable. In this talk, we try to shed light on the question of falsifiability by analysing the infrared features of FN models whilst staying agnostic about the fine details of the model. We achieve our goal by writing down a FN effective field theory, capturing all the local interactions allowed in the ultraviolet, and matching it to the Standard Model effective field theory (SMEFT) at the tree- and 1-loop-level. Our results indicate a rich and non-trivial signature of FN models on the SMEFT Wilson coefficients, leaving us with falsifiable predictions that could be studied at current and future colliders.

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