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Froggatt-Nielsen ALP

Tuesday, December 3, 2024 11:30 AM (30 minutes)

Froggatt-Nielsen models typically predict the existence of a light axion-like particle, pushing the new dynamic to a very high scale.

In this talk I will focus on models based on Z_N discrete symmetries, which are counterexamples in which the new scale might in fact be much lower.

I will first chart the allowed parameter space from a set of theoretical considerations, and then focus on two models based on Z_4 and Z_8 symmetries. For these, I will introduce explicit renormalizable UV completions and study the models' phenomenology in detail, highlighting the interplay between the effects of the ALP and of the UV fields.

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