

Keiichi Watanabe "Revisiting Froggatt-Nielsen Mechanism"

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The Froggatt-Nielsen (FN) mechanism is a compelling explanation for the hierarchical structures observed in the Yukawa couplings of charged leptons and quark mixing angles. In this mechanism, the above structures are realized by imposing different $U(1)$ charges for each generation of fermions under a new $U(1)$ flavor symmetry. So far, several FN charge assignments have been proposed in the literature where the charge assignments have typically been determined by hand. However, it is difficult to quantitatively determine which FN charge assignment is "good" in a systematic way. Besides, only a limited number of FN charge possibilities have been discussed. In this paper, we revisit choice of phenomenologically valid FN charges in the Standard Model with type-I seesaw mechanism and dimension five operator respectively in a Bayesian statistical approach.

Session Classification: Short talks