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SEMINAR ZAVODA ZA TEORIJSKU FIZIKU

Five anomalies for the Standard Model fitted as non-perturbative effects

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Abstract:

Although the Standard Model works extremely/ surprisingly well there has been found five barely statistically significant small deviations mainly of the type of violations of lepton flavour universality. We interpret these anomalies as effects of non-perturbative effects due to the top-Yukawa coupling being of order unity in such a way that it can cause some sort of severe non-perturbative effect; e.g. there could be some bound state of top-quarks and Higgs particles held together by the rather strong top-Yukawa coupling. We keep a bit abstract w.r.t. what the non-perturbative effect really is due to and rather fit by a single parameter K (at least order of magnitude-wise) the five anomalies found. Our model predicts too strong effects for mixing of mesons like B-mesons even after some reasonable attempt to repair this type of predictions.

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