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Flavor Structure of E6 GUT Models

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E6 unification is an interesting candidate for the model of grand unified theory because the assumption for the Yukawa hierarchies can be derived with a reasonable setup. In this study, we examine the relation between the structure of the Cabibbo-Kobayashi-Maskawa (CKM) matrix and the direction of the vacuum expectation value (VEV) of the Higgs fields which break the E6 gauge group. We have shown that our model can lead to a favorable structure of CKM matrix by choosing the VEV of the adjoint Higgs not to break U(1)_{B-L} symmetry. this choice of the VEV plays an important role in solving the doublet-triplet splitting problem by the Dimopoulos-Wilczek mechanism.

Presenter: Dr KAWASE, Hidetoshi

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