

26th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY2018)



Contribution ID: 173

Type: **Talk (closed)**

Flavor and CP Violation in SU(5) with Right-handed Neutrinos Revisited

Thursday 26 July 2018 16:10 (20 minutes)

The observed Higgs boson at the LHC gives information of the supersymmetric (SUSY) extensions of the standard model. In particular, to explain the mass of the observed Higgs boson, the SUSY scale should be above several TeV scale.

Further, the mixings and CP phases in the neutrino sector have been revealed by various neutrino experiments.

In the supersymmetric grand unified theories (SUSY GUTs) with type-I seesaw, we can use the experimental data as inputs, and then we can predict several observables.

Particularly, the flavor violation and CP violation in the sfermion sector relate with the large mixing and CP violation in the neutrino sector if the SUSY breaking is communicated to the visible sector above the GUT scale.

In this work, we revisited the status of SUSY GUTs with right-handed neutrinos.

We found the parameter region where the observed Higgs mass is explained and predicted flavor and CP observables are consistent with current constraints.

Further, future experiments for electric dipole moments will be able to test this model.

Parallel Session

Supersymmetry: Models, Phenomenology and Experimental Results

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Session Classification: Supersymmetry: Models, Phenomenology and Experimental Results