

Towards gauge coupling unification in minimal SU(5) at three-loop accuracy

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It was shown recently that the original SU(5) theory of Georgi and Glashow, augmented with an adjoint fermionic multiplet, is compatible both with neutrino masses and gauge coupling unification. In particular, the latter predicts the existence of light O(TeV) electroweak triplet states. We compute the correlation between the triplet masses and the unification scale at the NNLO level. Such an order of accuracy is needed in order to match the experimental precision on the determination of the electroweak gauge couplings.

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