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Appeal of seesaw mechanism for neutrino mass in supersymmetric grand unified theories NIMA ASSAD, Univ of California - San Diego — Experimental developments in neutrino physics have established the oscillation of neutrinos between flavor eigenstates, indicating the existence of non-zero neutrino masses. Precision measurements of neutrino oscillations and cosmological considerations have placed upper bounds on neutrino masses in the regime of eVs, leaving the neutrinos six orders of magnitude lighter than the electron, the lightest particle currently contained in the Standard Model. The type II seesaw mechanism through which neutrinos are proposed to have acquired mass reconciles the Standard Model with this disparity in mass scale through the introduction of right-handed neutrinos with Majorana masses of order 10^{15} GeV. This energy scale is consistent with the convergence of the Standard Model gauge couplings at high energies, and is thus favored in supersymmetric grand unified theories. Here, we study the type II seesaw mechanism implemented in a 126-based SO(10) unification group to account for the smallness of neutrino masses and the current experimental bounds on the large mixing angles contained in the PMNS lepton flavor mixing matrix.

Nima Assad
Univ of California - San Diego

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