



Contribution ID: 225

Type: **not specified**

Hierarchical majorana neutrinos from democratic mass matrices

Tuesday, 12 July 2016 14:25 (20 minutes)

In this study, we obtain the light neutrino masses and mixings consistent with the experiments, in the democratic texture approach. The essential ansatz is that ν_{Ri} are assumed to transform as “right-handed fields” $\mathbf{2}_R + \mathbf{1}_R$ under the $S_{3L} \times S_{3R}$ symmetry. The symmetry breaking terms are assumed to be diagonal and hierarchical. This setup only allows the normal hierarchy of the neutrino mass, and excludes both of inverted hierarchical and degenerated neutrinos. Although the neutrino sector has nine free parameters, several predictions are obtained at the leading order. When we neglect the smallest parameters ζ_ν and ζ_R , all components of the mixing matrix U_{PMNS} are expressed by the masses of light neutrinos and charged leptons. From the consistency between predicted and observed U_{PMNS} , we obtain the lightest neutrino masses $m_1 = (1.1 \rightarrow 1.4)$ meV, and the effective mass for the double beta decay $\langle m_{ee} \rangle \simeq 4.5$ meV.

Summary

Primary author: Dr YANG, Masaki (Saitama University)

Presenter: Dr YANG, Masaki (Saitama University)

Session Classification: Parallel I

Track Classification: Neutrino Physics