Contribution ID: **1161** Type: **Neutrinos**

A scotogenic model for realistic neutrino mixing with S3 symmetry

Wednesday 26 May 2021 14:45 (15 minutes)

[This is based on Phys.Rev. D100 (2019) no.3, 035009 by Soumita Pramanick]

In this model, realistic neutrino mixing is obtained radiatively using $S_3 \times Z_2$
symmetry at one-loop level. The two right-handed neutrinos present in the model when maximally mixed can yield the structure of the left-handed Majorana neutrino mass matrix corresponding to
$\theta_{13} = 0$, $\theta_{23} = \pi/4$ and any value of θ_{12}^0 specific to the Tribimaximal (TBM), Bimaximal (BM) and Golden Ratio (GR) or some other mixings.
Non-zero θ_{13}, deviation of θ_{23} from $\pi/4$ and
small corrections to the solar mixing angle θ_{12} can be achieved in a single stroke by shifting from this maximal mixing in the right-handed neutrino sector by a small amount.
In this scotogenic model where non-zero θ_{13} was obtained by deviating from maximal mixing in the right-handed neutrino sector, two Z_2 odd inert $SU(2)_L$ doublet scalars were also present, the lightest of which can be a dark matter candidate.

Summary

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symmetry at one-loop level. The two right-handed neutrinos present in the model when maximally mixed can yield the structure of the left-handed Majorana neutrino mass matrix corresponding to
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Session Classification: Neutrino II