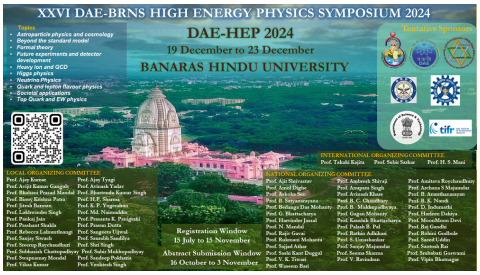

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Implications of LMA and Dark-LMA Solutions for Inverse Neutrino Mass Matrix with One Zero Texture and Vanishing Trace

In the presence of non-standard interaction (NSI), the solar neutrino problem has two solutions, one is for standard Large Mixing Angle (LMA) with solution $\sin^2{}_{12} = 0.3$ and other is $\sin^2{}_{12} = 0.7$. The latter is known as the Dark-Large Mixing Angle (D-LMA) solution. In this work, we have investigated the one zero texture and vanishing trace of inverse neutrino mass matrix in the context of LMA and D-LMA solution of the solar neutrino problem. In our work, we have six cases to study and we found that the textures which are allowed for LMA solution are also allowed for D-LMA solution. Further, we show the correlations between different parameters for 3 ranges of neutrino oscillation data. The case $m_{11}^{-1} = 0$ is not allowed as it cannot reproduce the correct neutrino phenomenology. Similarly, the case with $m_{12}^{-1} = 0$ predicts inverted hierarchical neutrino masses and is consistent with only LMA phenomenology. More results will be presented in the full length paper.

Field of contribution

Phenomenology

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