

Updating neutrino magnetic moment constraints

The study of the neutrino electromagnetic (EM) properties opens a door to explore physics beyond the Standard Model. The neutrino magnetic moment (NMM) have been the most studied neutrino EM property since the neutrino was proposed in 1930 by Wolfgang Pauli. If we consider Majorana neutrinos, the NMM matrix will be composed by three transition magnetic moments (TMM) which give us information about the neutrino-electron EM interaction. We have obtained an updated analysis of the constraints on the magnitudes of the TMM and the role of the CP violating phases. A combined study of reactor, accelerator and solar neutrinos was made in order to achieve these limits. The most stringent restrictions are provided by the Borexino experiment, where the limit obtained on the effective neutrino magnetic moment was 3.1×10^{-11} Bohr Magneton (BM). This corresponds to the individual transition magnetic moment constraints: 5.6×10^{-11} BM, 4×10^{-11} BM and 3.1×10^{-11} BM, respectively. In this talk, we are going to discuss about these results.

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