

Electromagnetic properties of neutrino

A review of theory and phenomenology of neutrino electromagnetic properties (EMP) is presented. The general structure of the Dirac and Majorana neutrinos electromagnetic interactions (given by charge, magnetic, electric, and anapole form factors defined as matrices in the mass basis with account for three-neutrino mixing) is presented. Constraints on neutrino EMP from the terrestrial laboratory experiments are reviewed. A special credit is done to bounds on neutrino electromagnetic characteristics obtained by the reactor (MUNU, TEXONO and GEMMA) and solar Super-Kamiokande and the recent Borexino and COHERENT experiments. The effects of neutrino EMP in astrophysics and cosmology are also reviewed. The best world experimental bounds on neutrino electromagnetic properties are confronted with the predictions of theories beyond the Standard Model. The prospects in studies of neutrino electromagnetic properties with future experiments are also discussed.

Session and Location

Wednesday Session, Poster Wall #137 (Hölderlin-Room)

Poster included in proceedings:

yes

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