

Sterile neutrinos in GAMBIT

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The type-I seesaw mechanism, able to explain the lightness of the three active neutrinos, requires the existence of exotic heavy neutral fermions, with a mass ranging from a few MeV to around a TeV. We propose a model with three such sterile neutrinos where the mixing matrices are parametrized using the Casas-Ibarra scheme. Direct detection constraints coming from DELPHI and ATLAS among others have been implemented, as well as indirect constraints such as big bang nucleosynthesis, neutrinoless double beta decay and lepton flavour violation. Using the GAMBIT framework we then have performed global fits on the model parameters and looked for regions of the parameter space that are statistically preferred.

Summary

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