

MiniBooNE, LSND, and the Sterile Neutrino Mystery

This poster reviews global fits to sterile neutrino oscillation models in light of the latest neutrino and antineutrino oscillation results from the MiniBooNE experiment. The analysis presented investigates the validity of the three-active plus one-sterile (3+1) and three-active plus two-sterile (3+2) CPT-conserving neutrino oscillation hypotheses, given constraints from past short-baseline appearance and disappearance experiments. One of the main conclusions is that large incompatibilities exist between neutrino and antineutrino experimental data sets in both scenarios. The differences found between neutrino and antineutrino data sets cannot be easily accommodated in a (3+2) model, even when CP-violation is allowed, due to strong constraints from ν_μ and ν_e disappearance experiments. Future sources of constraints to these models, as well as alternative oscillation schemes, are discussed.

Author: KARAGIORGI, Georgia (MIT)

Co-authors: CONRAD, Janet (MIT); SOREL, Michel (Valencia U, IFIC); SHAEVITZ, Mike (Columbia U); DJURCIC, Zelimir (Columbia U)

Presenter: KARAGIORGI, Georgia (MIT)