

Antineutrinos from the Sun and sterile neutrino decays

Friday, 31 July 2020 13:42 (3 minutes)

Searches for solar antineutrinos from $\nu \rightarrow \bar{\nu}$ conversions of B^8 neutrinos are highly sensitive to any source of MeV antineutrinos from the Sun. In this work we adapt these searches to non-minimal neutrino decay models recently discussed in the context of the LSND, MiniBooNE, and reactor anomalies. The production of such sterile neutrinos in the Sun, followed their cascade-like decays $\nu_4 \rightarrow \nu\phi \rightarrow \nu\nu\bar{\nu}$ via a new scalar ϕ results in upper limits for the neutrino mixing $|U_{e4}|^2$ of a few per mille. We then conclude with future prospects for Super-Kamiokande with added Gadolinium and comment on other interesting models for such decays.

Secondary track (number)

I read the instructions

Yes

Primary author: HOSTERT, Matheus (University of Minnesota)

Presenter: HOSTERT, Matheus (University of Minnesota)

Session Classification: Neutrino Physics - Posters

Track Classification: 02. Neutrino Physics