

Abstract Submitted
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Solar Antineutrinos Searches and Decaying Sterile Neutrinos

MATHEUS HOSTERT, University of Minnesota Perimeter Institute — Solar neutrino experiments have had great success in furthering our understanding of the neutrino sector and the Sun. Several of these experiments, like BOREXINO, KamLAND, and SuperKamiokande, are also very sensitive to inverse beta decay, a process with a unique experimental signature initiated by antineutrinos. We explore this in our work to derive constraints on a model of light new physics that transforms a small fraction of the neutrino flux from nuclear fusion reactions in the solar core into antineutrinos. The constraints disfavor recent proposals to explain the LSND and MiniBooNE anomalies with decaying sterile neutrinos. We conclude by looking at the near future and the improved sensitivity of the current experimental program.

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