

Workshop on Xenon Detector $0\nu\beta\beta$ Searches: Steps Towards the Kilotonne Scale

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Type: **Lightning talk**

Solar Neutrino Detection via Charged Current Interactions at the Kilotonne Scale

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Thanks to recent observations of long-lived excited Cesium-136 states, xenon detectors now have the potential to serve as solar neutrino observatories by using charged-current interactions of the form $\nu_e + {}^{136}\text{Xe} \rightarrow {}^{136}\text{Cs}^* + e^-$. This new detection method will be particularly potent at the kilotonne scale. In this lightning talk, I will discuss the projected capabilities of a theoretical kilotonne LXe detector to measure the CNO, pep, and ${}^8\text{B}$ solar-neutrino fluxes, as well as the energy of the ${}^7\text{Be}$ solar-neutrinos. I will also contextualize these predicted capabilities relative to the current measurements made by the Borexino and Kamland collaborations

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