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Liquid Scintillator Response at Low-Energy DANIEL PASSMORE, YURI EFREMENKO[1], University of Tennessee, Knoxville, OLEG PEREVOZCHIKOV COLLABORATION — The brightest source of neutrinos in our solar system is the sun. Neutrinos from the sun are especially hard to detect because they arrive to the Earth with energies less than 15MeV. KamLAND, a sensitive one-kiloton liquid scintillator detector allocated in a deep underground mine in central Japan, is preparing to detect solar neutrinos. To do this we must better understand the detectors response at the low energy region. Low energy particles have a different response because when traveling inside liquid scintillator at low energies they have a lower probability of emitting Cherenkov light. It is important to understand the amount of energy produced from these Cherenkov emissions and how this will affect neutrino energy reconstruction. This group has built a high precision Compton Spectrometer designed to study the response of the KamLAND liquid scintillator to the Cherenkov light. The spectrometer has high precision amplitude and time measurements by a data acquisition system based on the VME standard of electronics. The analysis of this data will be important for the future use of the KamLAND detector in detecting solar neutrinos.

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