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Solar neutrino analysis of SK-IV

Super-Kamiokande (SK), a 50 kton water Cherenkov detector in Japan, observes ^8B solar neutrinos with neutrino-electron elastic scattering. The main motivation of solar neutrino measurements with SK is to observe the MSW effect through a solar neutrino energy spectrum distortion induced by the matter in the Sun, and through a day/night solar neutrino flux asymmetry induced by the matter in the Earth.

A recent analysis of SK data provides an indication that the elastic scattering rate in the SK detector is larger when the neutrinos pass through the Earth during nighttime.

The combined energy spectrum and the day/night solar neutrino flux asymmetry from SK-I to SK-IV will be presented.

A global oscillation analysis using SK-I,II,III, and SK-IV data and combined with the results of other solar neutrino experiments as well as KamLAND reactor experiment has been carried out. The results of this global analysis will also be presented as well.

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