New Results on the Searches of Neutrino Magnetic Moment at the Kuo-Sheng Power Reactor

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(on behalf of the TEXONO Collaboration)

Abstract

The TEXONO Collaboration has been built up among scientists from Taiwan and China to pursue an experimental program in neutrino and astro-particle physics. The "flagship" efforts have been the study of low energy neutrino physics at the Kuo-Sheng Power Reactor Plant in Taiwan. The Reactor Laboratory is equipped with flexibly-designed shieldings, cosmic veto systems, electronics and data acquisition systems which can function with different detector schemes. Data taking during the Reactor Period June-01 till April-02 is based on an Ultra Low Background High Purity Germanium detector and 46 kg of CsI(Tl) crystal scintillator operating in parallel. A threshold of 5 keV has been achieved for the germanium detector, and the background level is comparable to those of Dark Matter experiments underground. We expect to reach and improve on the current sensitivities in neutrino magnetic moment searches from this data set. The results will be presented. The other analysis topics for this Reactor Period and the extended TEXONO program will be outlined.

References

1. Home Page @ http://hepmail.phys.sinica.edu.tw/ texono/index.html
2. "Research Program of the TEXONO Collaboration : Status and Highlights", hep-ex/0201001, and references therein.
3. Presentation in WIN02 Workshop, January 2002, Christchurch, http://hepmail.phys.sinica.edu.tw/ texono/TRANSPARENCY/LIB/win02.ppt