

## Measurement of $\bar{\nu}_e$ - Electron Scattering Cross-Section with a CsI(Tl) Scintillating Crystal Array at the Kuo-Sheng Nuclear Power Reactor

The  $\bar{\nu}_e$  electron elastic scattering cross-section was measured with a CsI(Tl) scintillating crystal array having a total mass of 187 kg. The detector was exposed to an average reactor neutrino flux of  $6.4 \times 10^{12} \text{ cm}^{-2} \text{ s}^{-1}$  at the Kuo-Sheng Nuclear Power Station. The experimental design, conceptual merits, detector hardware, data analysis and background understanding of the experiment will be discussed. We will present final results with 29882/7369 kg-days of Reactor ON/OFF data, on the measured cross-section, the standard electroweak parameters  $\sin^2 \theta_W$  and  $(g_V, g_A)$ , the test on charged-current neutral-neutral interference, as well as limits on neutrino magnetic moments and charge radius. We will also present constraints on non-standard interactions based on this data set.

### Summary

Reference :

M. Deniz et al., TEXONO Collaboration, arXiv:0911.1597 (2009). <http://arxiv.org/abs/0911.1597>

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