Contribution ID: **1012** Type: **Parallel session talk**

Probing Physics within and beyond the Standard Model with coherent neutrino nucleus elastic scattering at the Kuo-Sheng Reactor Neutrino Laboratory with the TEXONO Experiment

Friday 19 July 2024 10:00 (15 minutes)

Nuclear power reactors offer an intense source of antineutrinos ($\bar{\nu}$ e) for investigating Coherent Neutrino Nucleus Elastic Scattering (CνAel – a Standard Model process) at low energy in the complete coherency regime [1, 2]. Furthermore, they offer avenues for probing the beyond Standard Model (BSM) aspects of CνAel, including various low mass light mediators and non-standard interactions. The TEXONO experiment employs state-of-the-art point-contact high-purity Germanium detectors at O(100 eV) threshold [3] to study neutrino physics at the Kuo-Sheng nuclear power plant. In this presentation, we will give an overview of our research activities and present the latest results in probing SM and BSM physics with CνAel.

References
[1] S. Kerman et al. (TEXONO Collaboration), Phys. Rev. D 93, 113006 (2016).
[2] V. Sharma et al. (TEXONO Collaboration), Phys. Rev. D 103, 092002 (2021).
[3] A.K. Soma et al. (TEXONO Collaboration), Nucl. Instrum. Methods Phys. Res. A 836, 67 (2016).

Alternate track

1. Beyond the Standard Model

I read the instructions above

Yes

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