Contribution ID: **37** Type: **Talk**

Studies of Coherency Effects in Neutrino-Nucleus Elastic Scattering using PCGe Detectors

Wednesday 22 March 2023 15:00 (15 minutes)

Neutrino nucleus elastic scattering (νAel) is the direct test for electroweak interaction in the Standard Model of particle physics. Several experimental programs are being actively pursued in the observation of low energy νAel. The TEXONO research program at Kuo-Sheng neutrino laboratory (KSNL) uses state-of-art point contact Germanium detector technology with $\mathcal{O}$(100 eV) threshold to probe such low energy interactions. We will highlight the current status and results of the νAel activities at the TEXONO experiment. The studies of analytical formulation and the constraints on coherency effects in νAel will also be presented.

[1] "Coherency in neutrino-nucleus elastic scattering", S. Kerman et al., TEXONO Collaboration, Phys. Rev. D 93, 113006 (2016).

[2] "Studies of quantum-mechanical coherency effects in neutrino-nucleus elastic scattering", V. Sharma et al., TEXONO Collaboration, Phys. Rev. D 103, 092002 (2021).

Author: Dr SHARMA, Vivek (H. N. B. Garhwal University, Srinagar-Garhwal, India)

Co-authors: WONG, Henry (Academia Sinica); Mr KARMAKAR, Shuvadeep (Department of Physics, Institute of Applied Sciences and Humanities, GLA University, Mathura 281406, UP, India)

Presenter: Dr SHARMA, Vivek (H. N. B. Garhwal University, Srinagar-Garhwal, India)

Session Classification: Experiments