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Studies of Quantum Mechanical Coherency Effects in Neutrino-Nucleus Elastic Scattering VIVEK SHARMA, HENRY WONG, Institute of Physics, Academia Sinica, TEXONO COLLABORATION — Neutrino-Nucleus Elastic Scattering (νA_{el}) is a well-defined process in the Standard Model of particle physics. It provides a unique laboratory to study the quantum mechanical coherency effects in electroweak interactions. We present an analytical formulation [1] to quantify the coherency effects (α), relate this to nuclear form factors and experimental cross-section ratios, and characterize how its energy dependence leads to complementary among measurements at various neutrino sources with different targets. The latest results and prospects of observing νA_{el} at the Kuo-Sheng Reactor Neutrino Laboratory with germanium detectors with $\mathcal{O}$(100 eV) threshold [2] will also be presented.

[1]S. Kerman et al., **Phy. Rev. D** 93, 113006 (2016)
[2]A. K. Soma et al., **Nucl. Instrum. Meth. A** 67, 836 (2016)

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