

Status of Neutrino-Nucleus Scattering Observations in the NEON Experiment

Wednesday 27 August 2025 18:00 (20 minutes)

The Neutrino Elastic-Scattering Observation with NaI(Tl) (NEON) experiment is primarily designed to detect coherent elastic neutrino-nucleus scattering (CEvNS). Situated in the tendon gallery of the Hanbit Nuclear Power Plant in Yeonggwang, South Korea, the NEON experiment utilizes reactor neutrinos as a source for the neutrino interaction. Since its successful initiation in 2022, the experiment has been continuously collecting data utilizing six high-light-yield NaI(Tl) detectors of total 16.7 kg. Currently, approximately 780 days of reactor-on data and 220 days of reactor-off data are available for analysis, and data collection remains ongoing. Recently, the NEON experiment has expanded its search also to include incoherent neutrino-nucleus scattering processes, which involve nuclear excitation, and the corresponding signal can be identified through the 57.6 keV gamma transition of Iodine.

We present recent analysis results on both coherent and incoherent neutrino-nucleus scattering.

Collaboration you are representing

NEON

Author: LEE, Seo Hyun

Presenter: LEE, Seo Hyun

Session Classification: Neutrino Physics and Astrophysics

Track Classification: Neutrino Physics and Astrophysics