Contribution ID: **332** Type: **Poster**

A signal search for the dark axion portal in the NEON experiment

Wednesday 29 March 2023 19:17 (1 minute)

Neutrino Elastic scattering Observation with NaI (NEON) is in progress at the Hanbit nuclear power plant in Yeonggwang, South Korea. The NEON experiment consists of 15 kg of target crystals immersed in 700 liters of scintillating liquid, and located at 24 meters from the 2.8 GW reactor core. The main goal of NEON is to observe the reactor electron anti-neutrino coherent scattering (CEvNS) using NaI(Tl) crystal detectors. NEON's CEvNS observation requires a very low energy threshold of less than 0.5 keV with a precise understanding of the detector and surrounding environment. While accumulating sufficient data and developing an optimal analysis for the CEvNS measurement, we perform a search for dark axion portal (DAP) signals where an axion couples with a dark photon and an electron with a relatively higher threshold. Being exposed to a high flux in a large amount of liquid scintillator, the detector is poised to be highly sensitive to the DAP signals. In this poster, an overview of the NEON experiment and an analysis strategy for DAP are introduced.

Primary author: KOH, Byoung-cheol

Presenter: KOH, Byoung-cheol

Session Classification: Reception and Poster Session in the same room