Contribution ID: **36** Type: **not specified**

Status of NEON and NEOS

Monday, 3 June 2024 16:30 (30 minutes)

Nuclear reactors produce a huge amount of neutrinos from the beta decay that occurs during fission. An excellent detection channel for electron antineutrinos, called inverse beta decay, has led to numerous neutrino experiments using reactor neutrino. The Hanbit Nuclear Power Plant in Yeonggwang has six units with a thermal power of 2.8 GW, and each unit has a Tendon Gallery that is accessible 24 meters away from the reactor core. NEOS had been conducted an experiment in the Tendon Gallery from 2015 to search for sterile neutrinos, one hypothesis to explain the reactor antineutrino anomaly. Meanwhile, the combined experience of NEOS and COSINE, an underground experiment to search for dark matter, has led to attempts to observe coherent elastic neutrino-nucleus scattering, and the NEON collaboration was formed to conduct the experiment at the Tendon Gallery. As well as neutrinos, nuclear reactors are also very rich gamma sources, and NEON has carried out a search for dark sector particles that can be produced from nuclear gamma. This talk will include an overview of both experiments and recent results.

Primary author: KO, Young Ju (IBS)

Presenter: KO, Young Ju (IBS)

Session Classification: Plenary 4