

First Neutrinos on Large Picosecond Photodetectors in ANNIE

Friday, 21 June 2024 17:30 (2 hours)

The Accelerator Neutrino Neutron Interaction Experiment (ANNIE) is a 26-ton water Cherenkov detector that operates in the path of the Booster Neutrino Beam at Fermilab. ANNIE's studies of neutrino-nucleus interactions in water-based targets have the potential to reduce systematic uncertainties in future long-baseline neutrino oscillation experiments. At the same time, ANNIE serves as an effective test platform for a range of advanced detector technology, including innovative water-based detection media and the novel photosensors known as Large Area Picosecond Photodetectors (LAPPDs).

We present preliminary event reconstruction of the first beam neutrinos ever detected with an LAPPD and evaluate the early performance of these photodetectors in the context of a neutrino experiment. We also consider lessons learned from the commissioning and deployment of the first integrated LAPPD system ever operated underwater as part of an active physics experiment.

Poster prize

No

Given name

Amanda

Surname

Weinstein

First affiliation

Iowa State University

Second affiliation

Institutional email

amandajw@iastate.edu

Gender

Female

Collaboration (if any)

ANNIE Collaboration

Primary authors: WEINSTEIN, Amanda (Iowa State University); Prof. WETSTEIN, Matthew (Iowa State University)

Presenter: WEINSTEIN, Amanda (Iowa State University)

Session Classification: Poster session and reception 2

Track Classification: Neutrino interactions