



Contribution ID: 691

Type: **Parallel Talk**

## Status of the ANNIE experiment

*Thursday, 7 July 2022 11:45 (15 minutes)*

The Accelerator Neutrino Neutron Interaction Experiment (ANNIE) is a Gadolinium-loaded water Cherenkov detector located in the Booster Neutrino Beam at Fermilab. One of its primary physics goals is to measure the final state neutron multiplicity of neutrino-nucleus interactions. This measurement of the neutron yield as a function of the outgoing lepton kinematics will be useful to constrain systematic uncertainties and reduce biases in future long-baseline oscillation and cross-section experiments. ANNIE is also a testbed for innovative new detection technologies. It will make use of pioneering photodetectors called Large Area Picosecond Photodetectors (LAPPDs) with better than 100 picosecond time resolution, which will enhance its reconstruction capabilities and demonstrate the feasibility of this technology as a new tool in high energy physics. This talk will present the status of the experiment in terms of the overall progress, the deployment of the first LAPPD and an overview of recently taken beam and calibration data. Additional future R&D efforts and analysis opportunities involving the use of the novel detection medium of Water-based Liquid Scintillators will be briefly highlighted.

### In-person participation

Yes

**Primary author:** NIESLONY, Michael (Mainz University)**Presenter:** NIESLONY, Michael (Mainz University)**Session Classification:** Neutrino Physics**Track Classification:** Neutrino Physics