

Initial Look at Event Reconstruction in ANNIE

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

The Accelerator Neutrino Neutron Interaction Experiment (ANNIE) is a 26-ton gadolinium-doped water Cherenkov detector situated 100 meters downstream in Fermilab's Booster Neutrino Beam. ANNIE's main physics goal is to measure the final state neutron multiplicity of neutrino-nucleus interactions. This measurement will improve our understanding of these complex interactions and help reduce the associated systematic uncertainties, thus benefiting the next generation of long-baseline neutrino experiments. ANNIE has several years of beam data. This poster covers the initial phases of event reconstruction and characterization of neutron multiplicity as a function of momentum transfer. Techniques, such as ringing imaging to extract muon vertex and other methods for energy reconstruction, are discussed.

Poster prize

Yes

Given name

Julie

Surname

He

First affiliation

University of California, Davis

Second affiliation

Institutional email

juhe@ucdavis.edu

Gender

Female

Collaboration (if any)

Accelerator Neutrino Neutron Interaction Experiment (ANNIE)

Primary author: HE, Julie (University of California, Davis)

Presenter: HE, Julie (University of California, Davis)

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