



University of Crete  
Department of Physics

## *Physics Colloquium*

Thursday, 24 November 2022 | 17:00 – 18:00, Seminar Room 3<sup>rd</sup> floor

# **The ANNIE experiment: Highlights and Prospects**

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### **ABSTRACT**

*The Accelerator Neutrino Neutron Interaction Experiment (ANNIE) aims to measure final-state neutron abundance from neutrino-nucleus interactions. This 30-ton water Cherenkov detector, which operates in the path of the Booster Neutrino Beam at Fermilab, is also a testbed for innovative new detection media (such as gadolinium-loaded water to enhance the neutron capture cross-section) and for novel micro-channel-plate-based photosensors known as Large Area Picosecond Photodetectors (LAPPDs). ANNIE's physics measurements and new technologies offer future gains for both long-baseline neutrino oscillation physics and low-energy neutrino astronomy. In this talk I will consider recent highlights from ANNIE, including the first successful observation of a neutrino beam with LAPPDs, as well as ANNIE's role in the larger ecosystem of neutrino experiments and ANNIE prospects for the near future.*