



Contribution ID: 20

Type: **Short talk (15min. + 5 min. Q/A)**

Event Classification and Annotated Dataset in CONNIE

Thursday 30 October 2025 16:55 (15 minutes)

The COherent Neutrino–Nucleus Interaction Experiment (CONNIE), located 30 m from the core of the Angra 2 reactor at the Almirante Álvaro Alberto Nuclear Power Plant in Brazil, is the first reactor neutrino experiment to employ silicon Skipper-CCDs with the aim of detecting coherent elastic neutrino-nucleus scattering (CEvNS), searching for physics beyond the Standard Model, and monitoring reactor activity. A key challenge is distinguishing between various event types within large volumes of unlabeled data, and to address this, machine learning methods are applied to classify CONNIE events, providing a benchmarking analysis. For this purpose, a labeled dataset of real experimental events is developed using the Annotation Redundancy with Targeted Quality Assurance method, in which multiple annotators independently label the same subset of data to identify and resolve discrepancies, building a reliable and robust dataset. We will present preliminary results demonstrating the performance of the classification models and the progress in constructing the annotated dataset.

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Session Classification: New Experiments and Datasets