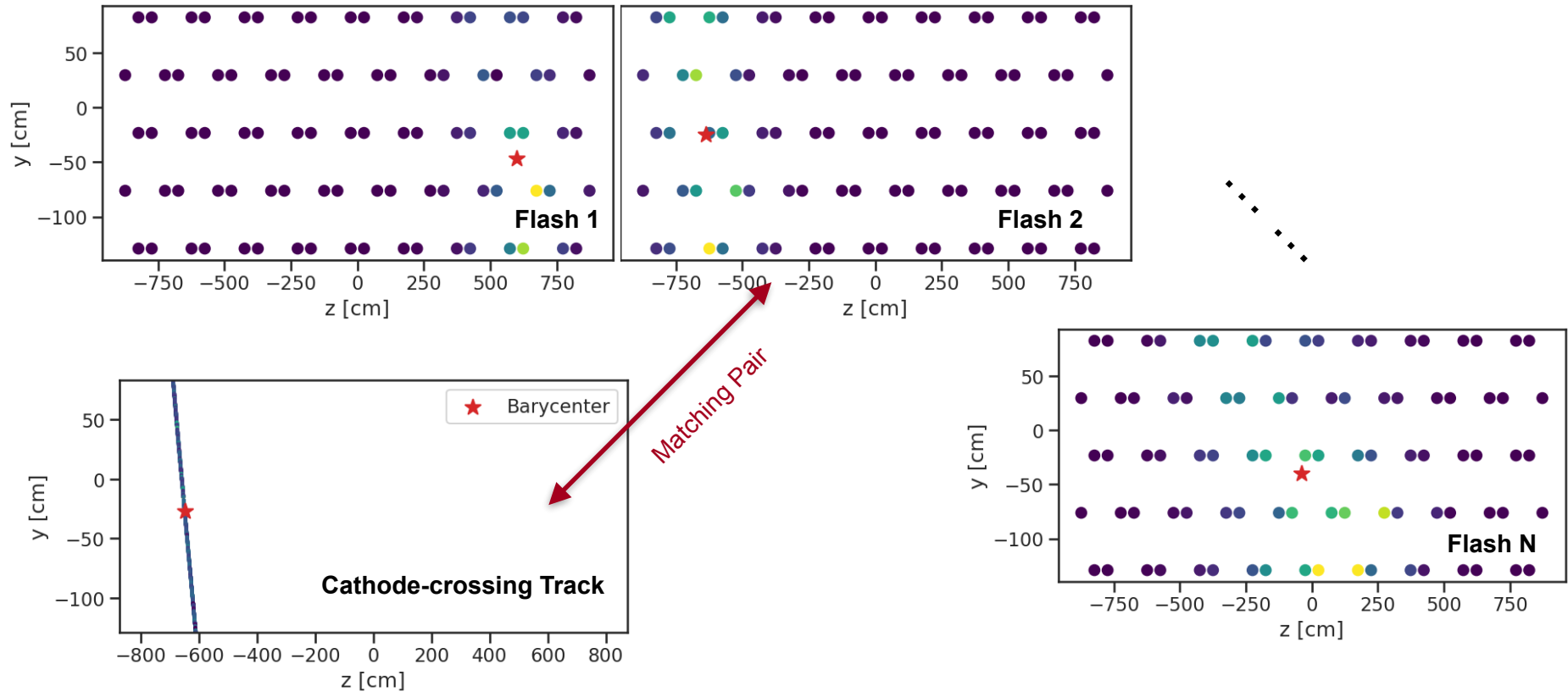


# CIDeR-ML Workshop Summary

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Sep 26, 2025

# Introduction: Calibration Dataset



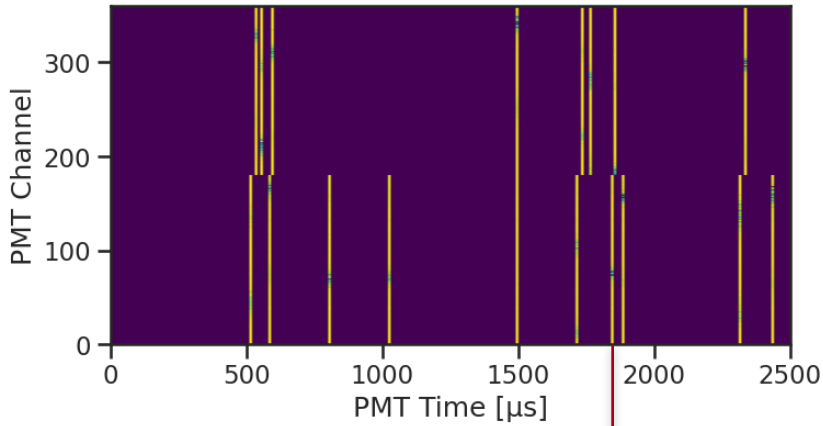
For each cathode-crossing track, match to an optical flash that close in time and position.

**Workshop Goal:** Extract the PMT waveforms for the matched flash

- to evaluate the quality of flash identification, and
- to develop AI/ML flash making algorithm.

# PMT Waveform

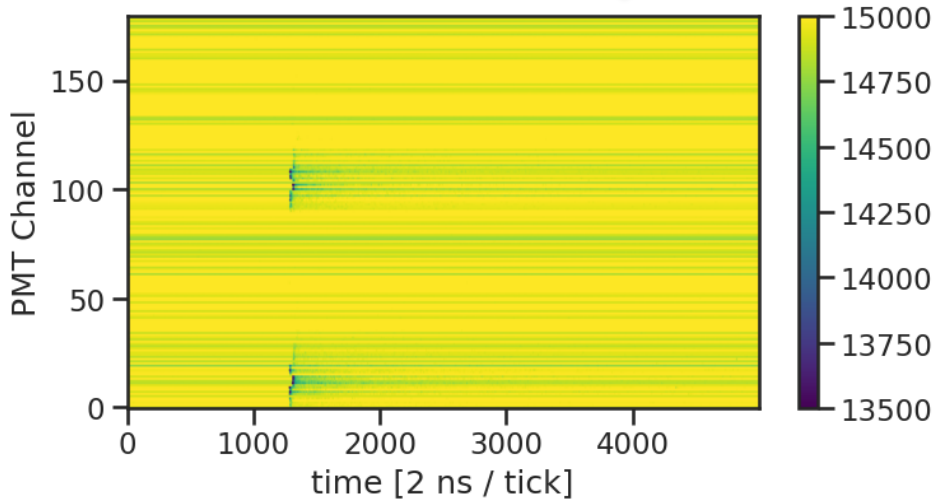
### All PMT Waveforms for the Selected Event



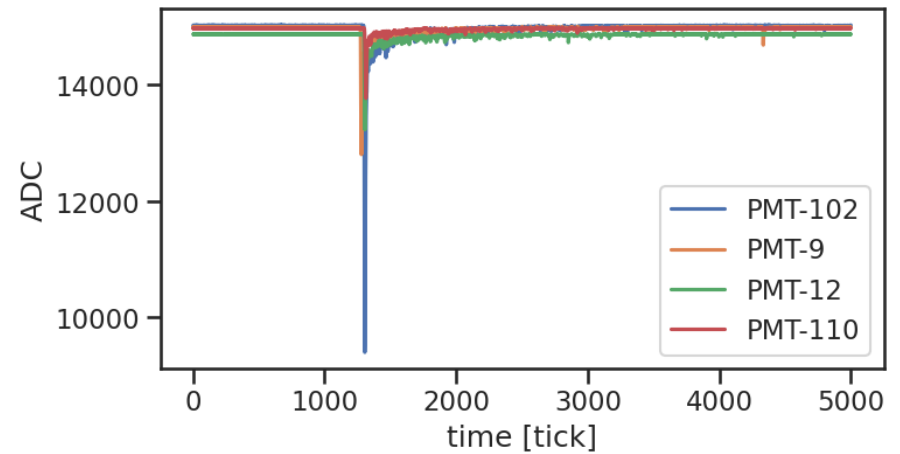
Purple: empty - no waveform recorded

Color: PMT data in ADC

Matched Flash at ~1750  $\mu$ s

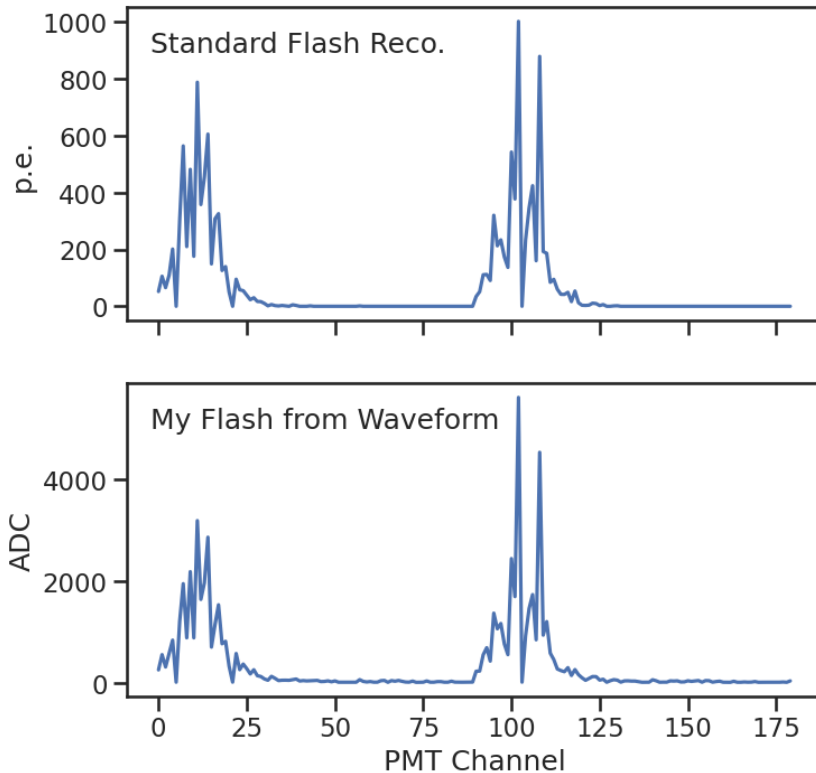


### Example Waveforms



# Summary

Waveform Validation Plot



**Workshop Goal Accomplished:** build a mechanism to extract PMT waveform for ICARUS calibration dataset.

**Future Plan:** mass production of ~1M track-flash pairs (~2 MB per pair).