

Tests of the PDs in the 35 ton Cryostat

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PD Tests

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- Tested flasher inside cryostat on Thursday 10/1 and Friday 10/2
- Ran using LBNE calibration module with program that pulses all five PD channels
- Major issue resolved: calibration module must be run with at least thousands of pulse sets to guarantee that nonzero number of events are properly analyzed and produce plots
- Optical fiber broke while moving flasher on Friday morning, but several runs with good data illustrating light from the calibration module were taken
- Default settings used: single pulse 210 ns in width, repeated at frequency of 143.051 Hz

PD Tests

- Two middle PDs attached to SSP03 and SSP04 were covered while six side photon detectors were uncovered
- Following plots show one channel from each PD. No signals appear on two center channels and clear signals appear on side PDs and no signals on the two center ones, confirming that PD saw light from ANL diffuser



Figure 1: Flasher installed on the leftside of the APAs to flash light behind the APAs (unsuccessful due to optical fiber break).

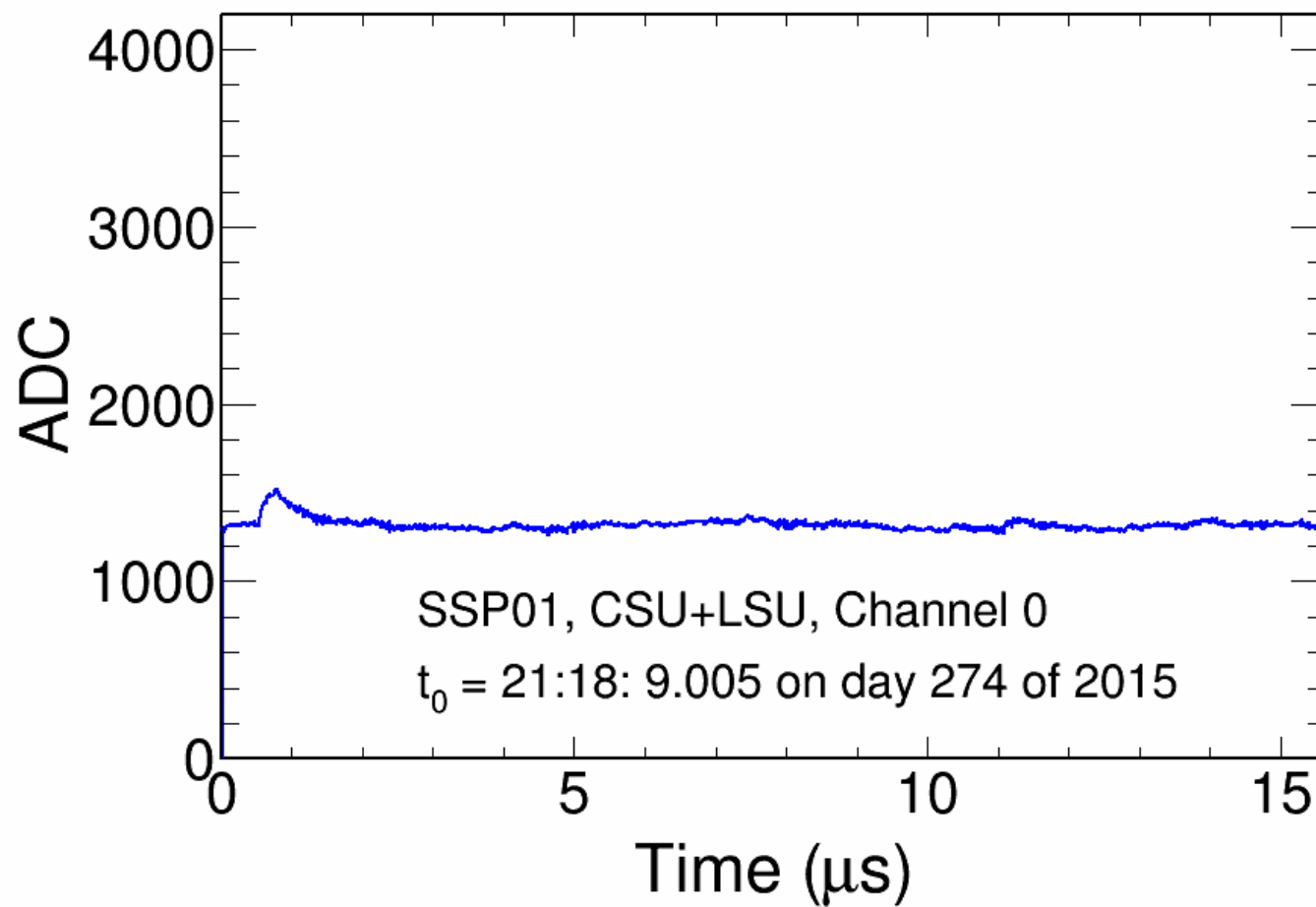


Figure 2: Right top, Fibers

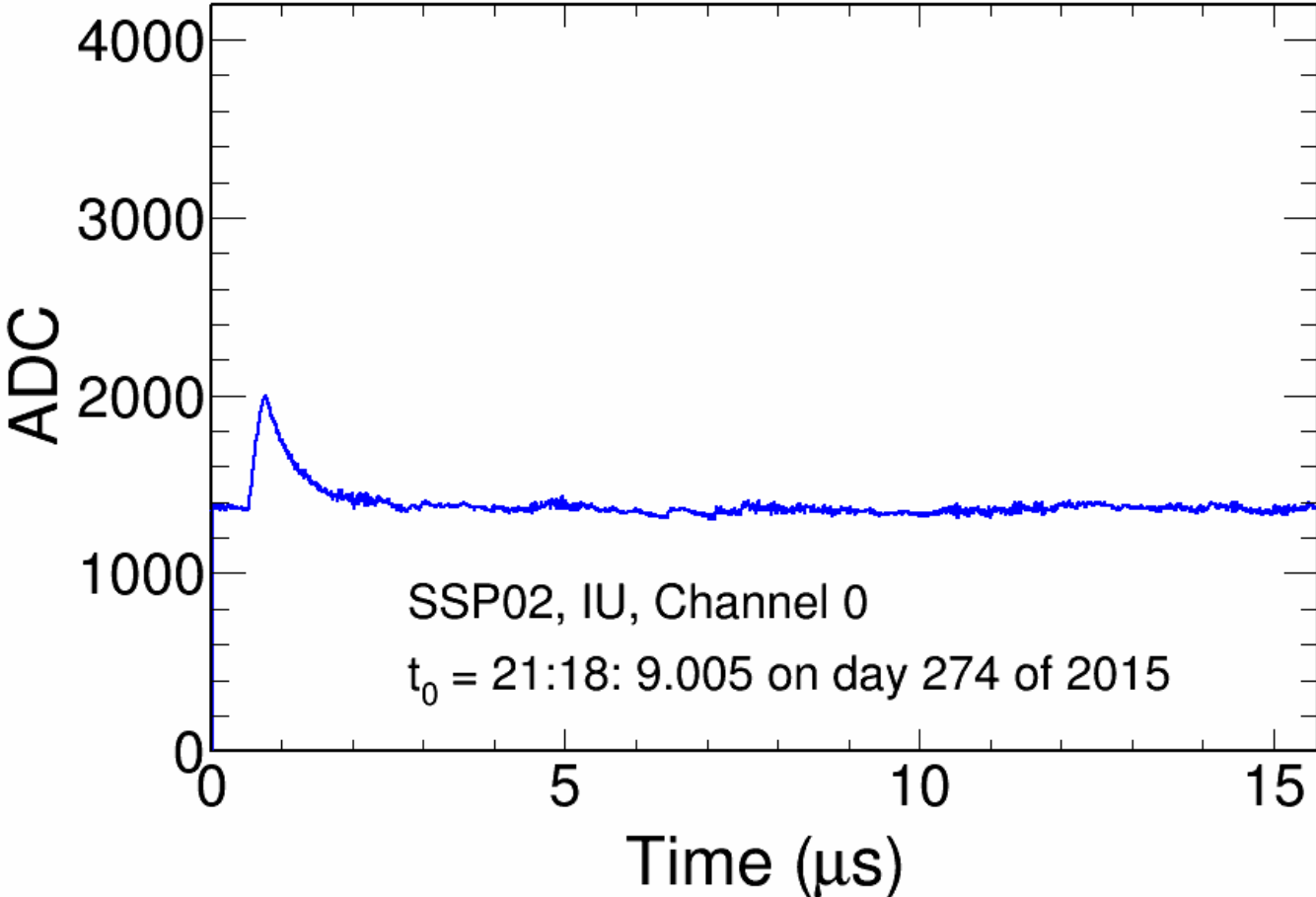


Figure 3: Right middle, Bars

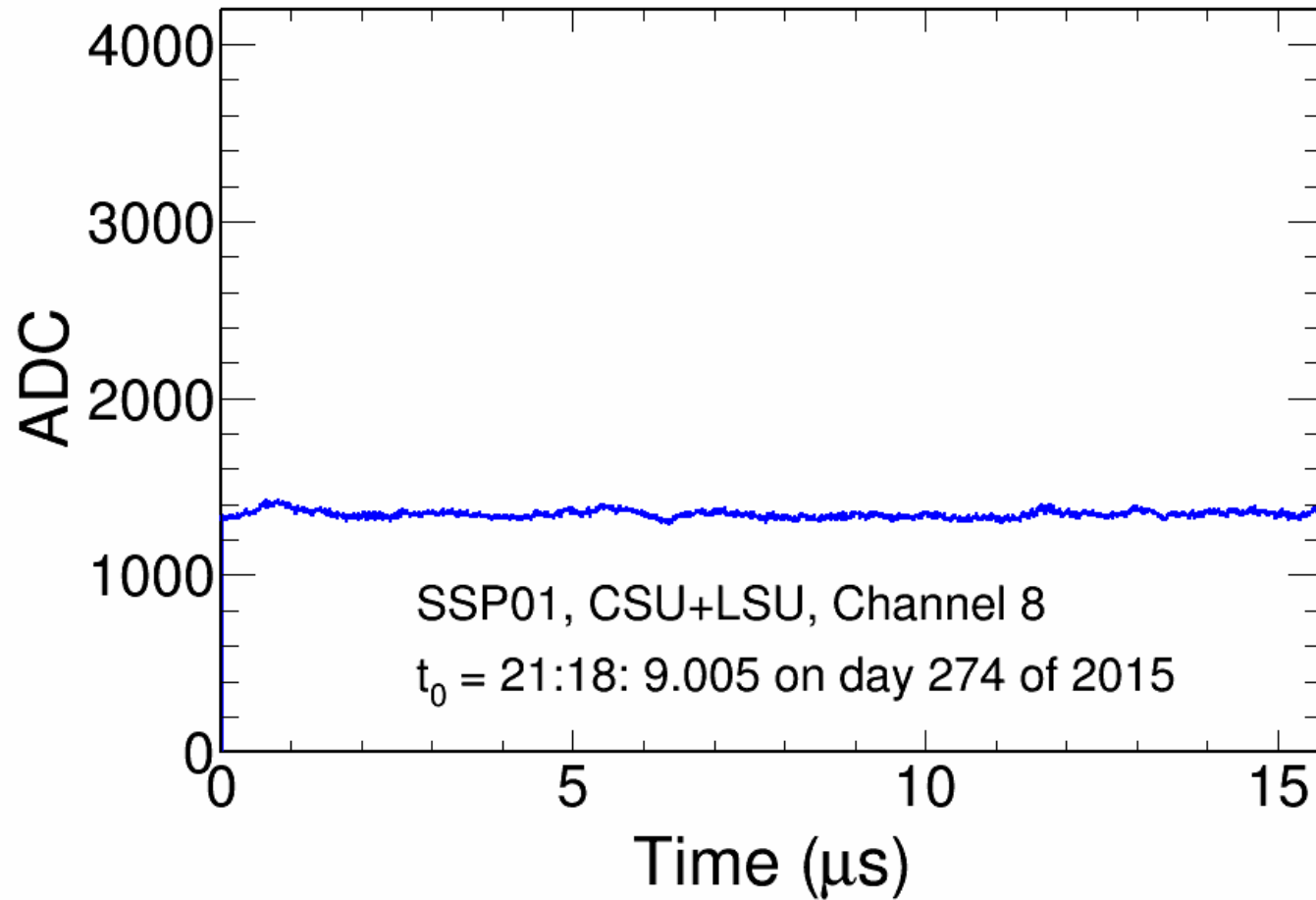


Figure 4: Right bottom, Plank

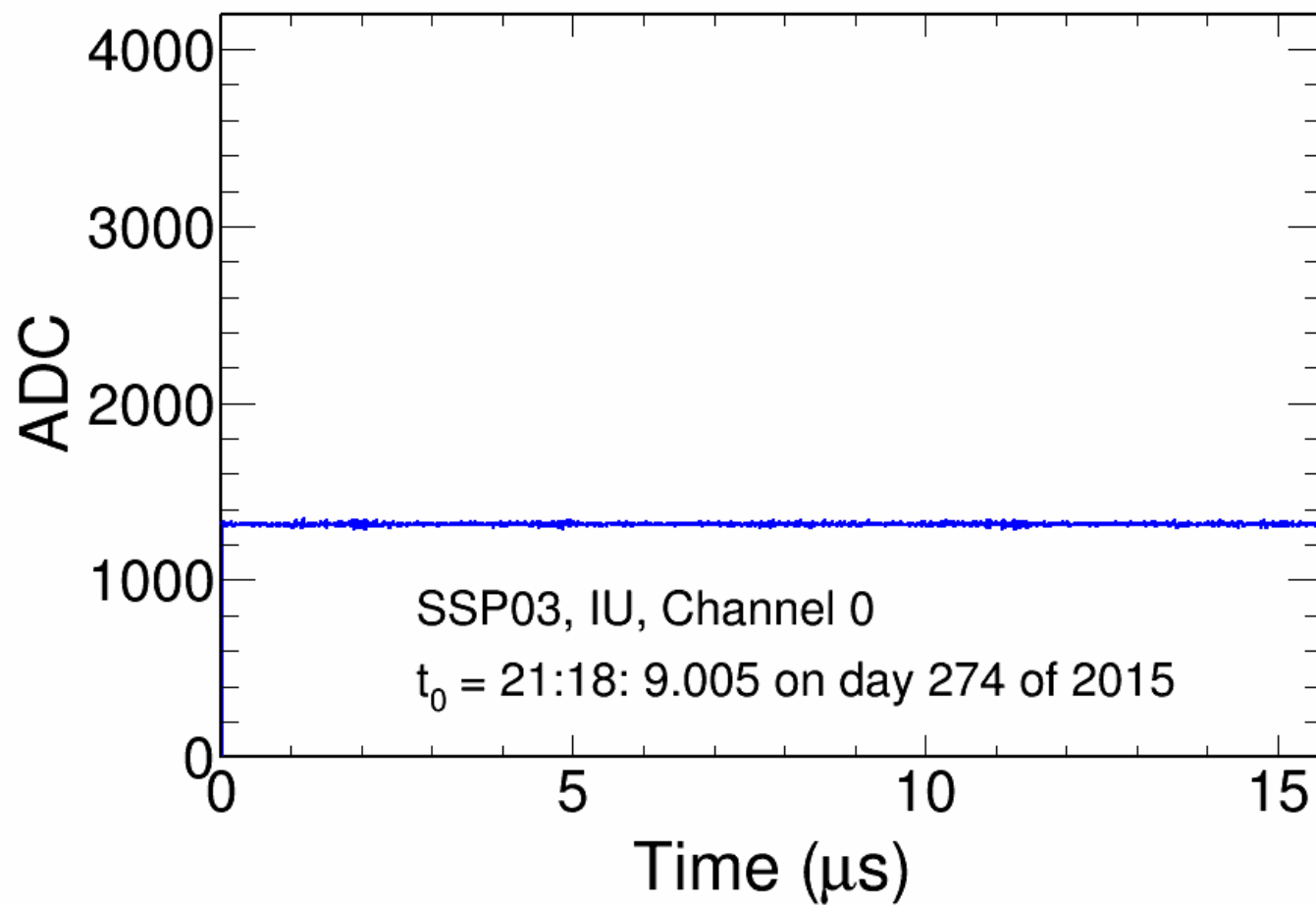


Figure 5: Center top, Bars

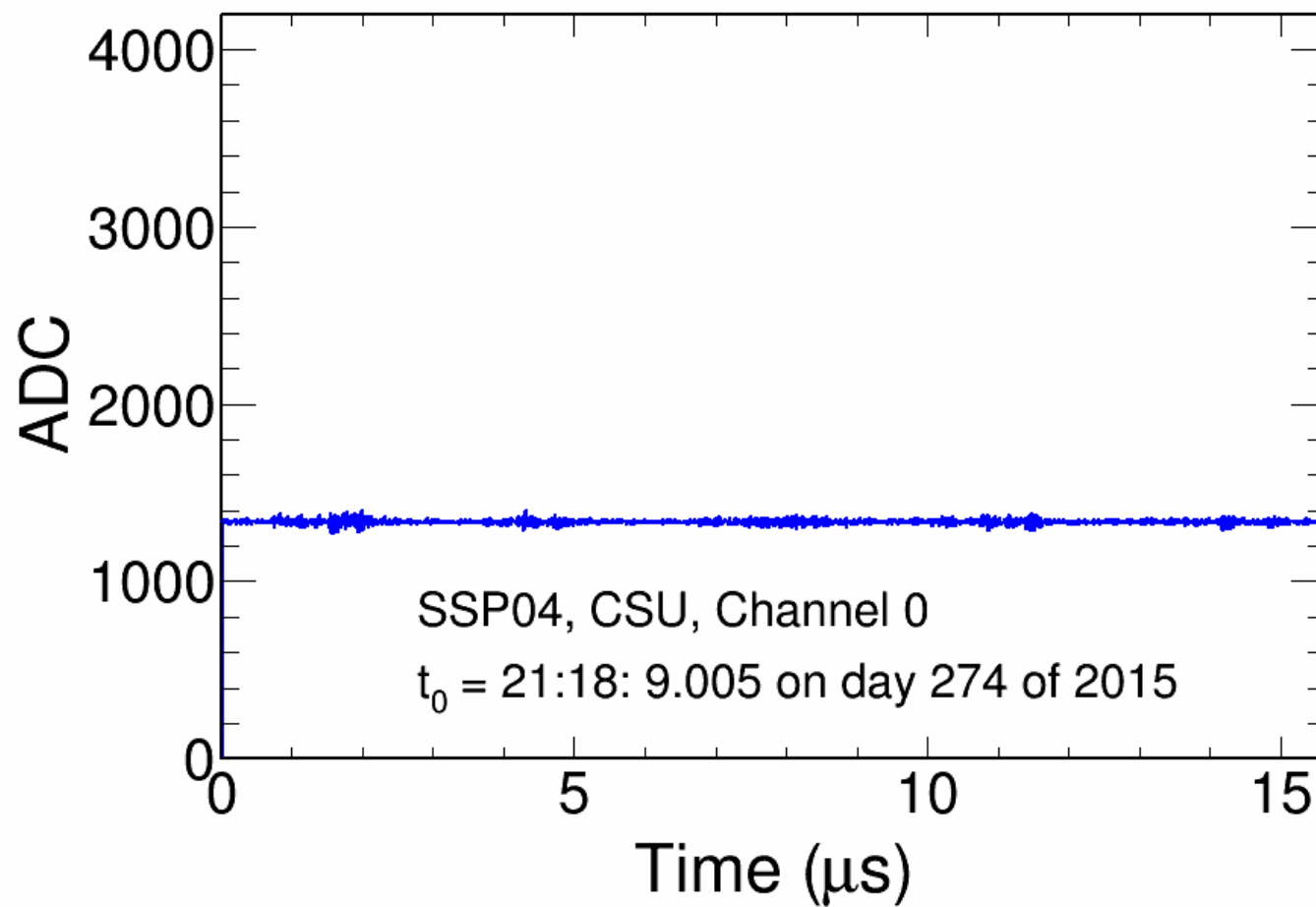


Figure 6: Center bottom, Fibers

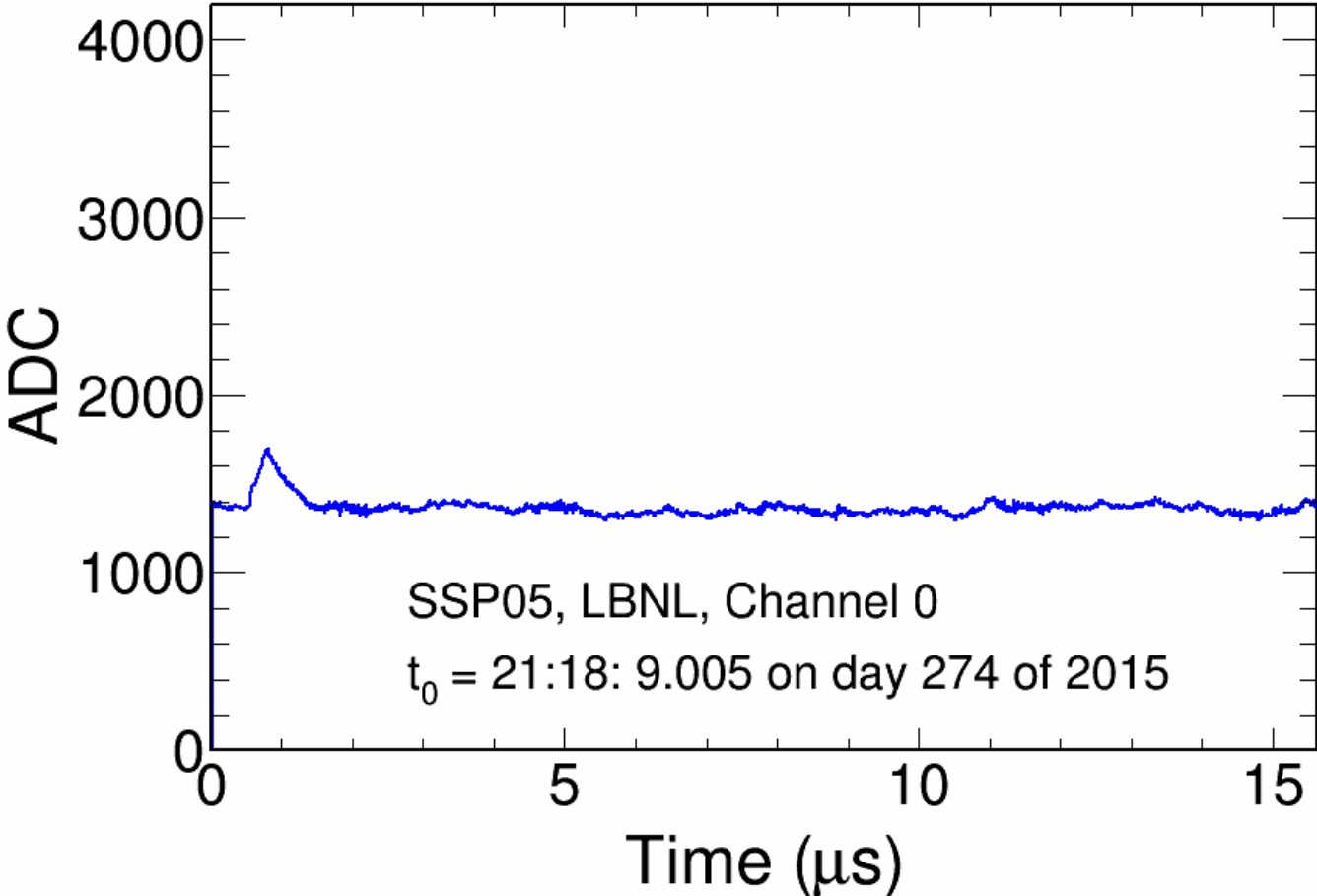


Figure 7: Left top, Bars

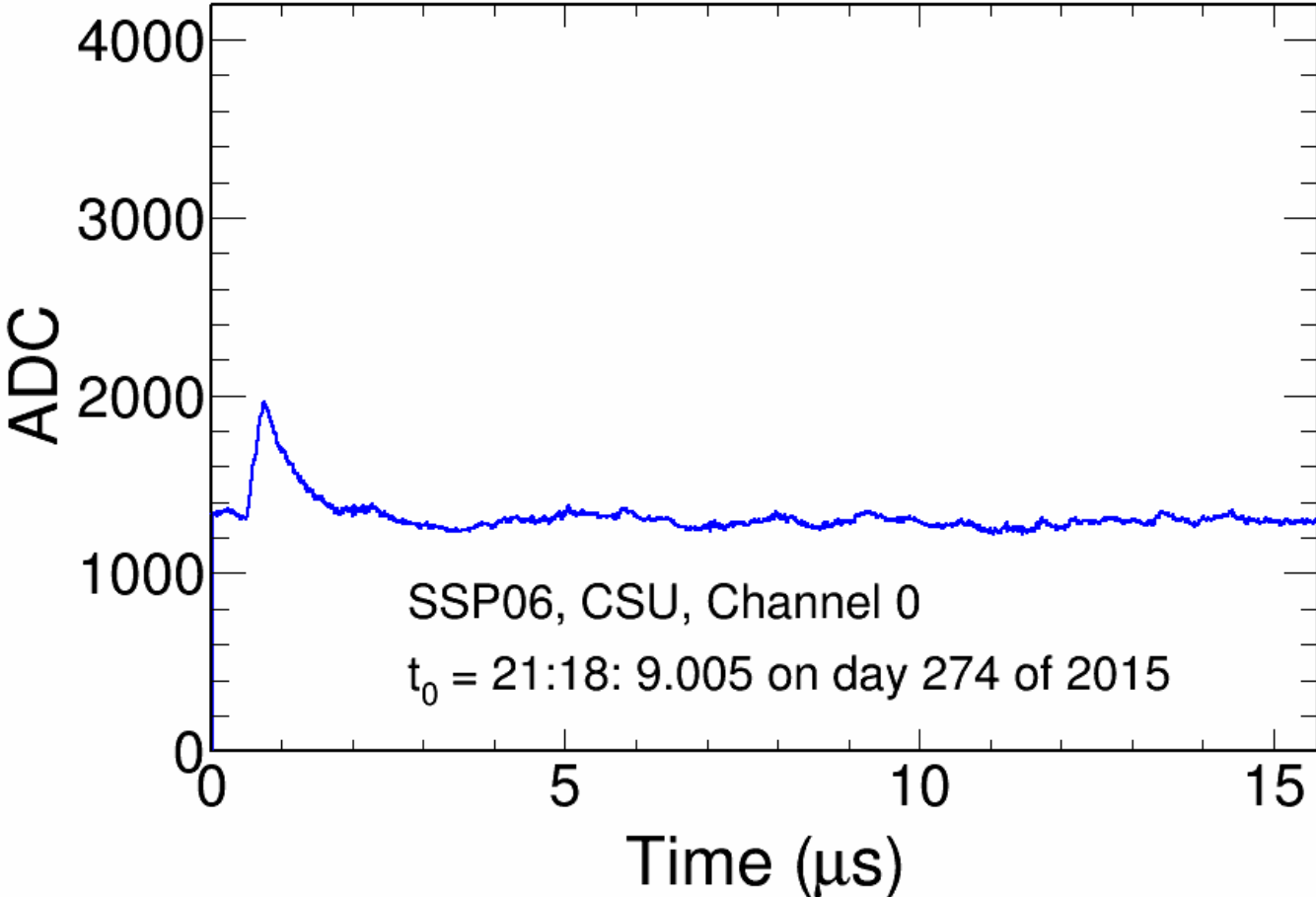


Figure 8: Left middle, Fibers

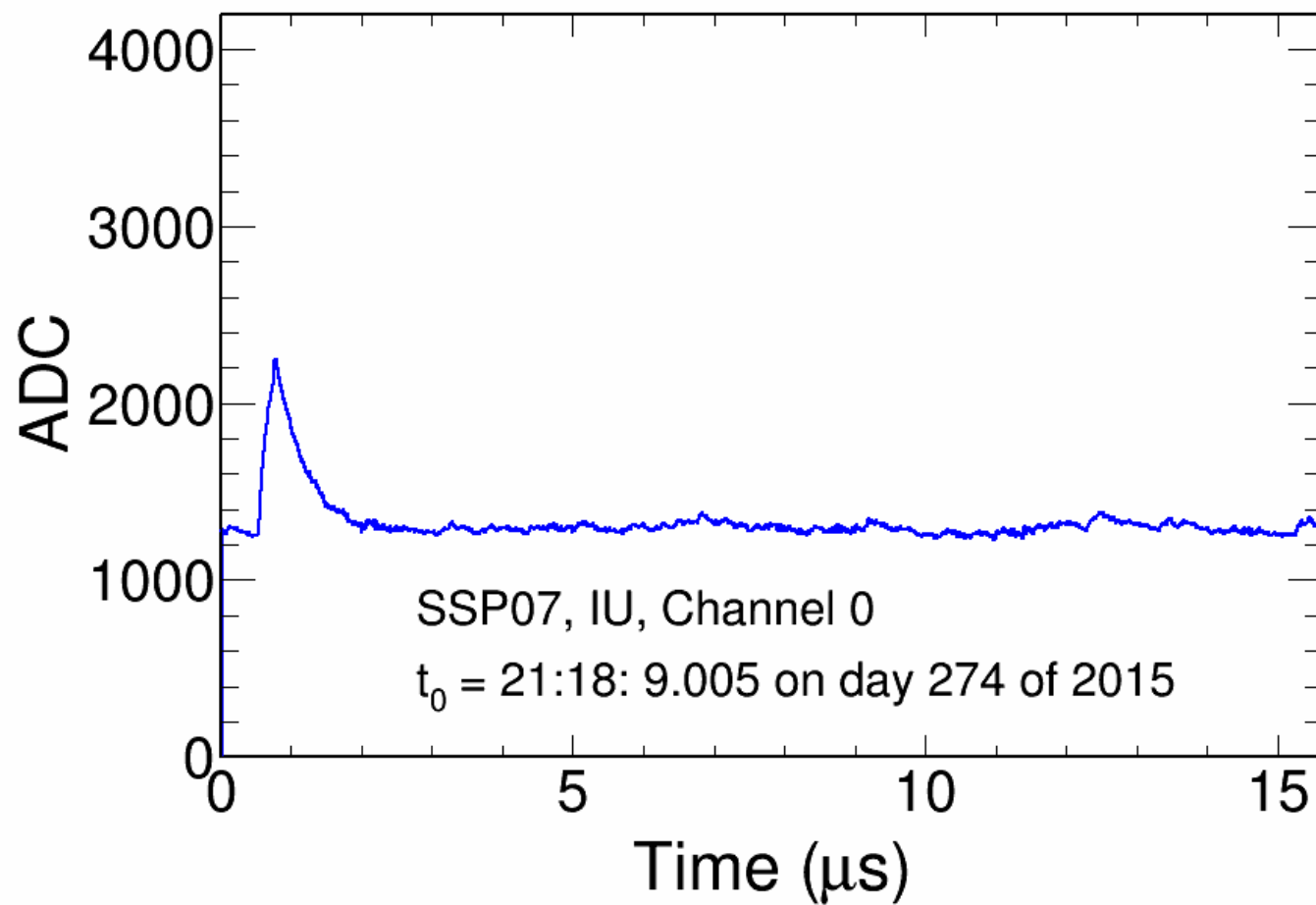


Figure 9: Left bottom, Bars

Summary and Next Steps

- Calibration module and software have been tested and work properly
- Side PDs showed clear response from ANL diffuser
- LCM program is being updated to control each of 5 PD channels separately for future calibration