

Abstract Submitted
for the DNP15 Meeting of
The American Physical Society

Simulating Front End Flash in the NO ν A Experiment¹ JACLYN SCHILLINGER, NSF REU at Indiana Univ, NOVA COLLABORATION — NO ν A is an experiment based at Fermilab that aims to learn more about neutrino oscillations. The detectors for NO ν A use cells filled with liquid scintillator to observe energy deposited by particles produced in interaction. Groupings of 32 cells connect to a single front end board, FEB, where the electronics are located and which is also connected to a capacitor that is used as ground. Particularly high energy signals can pull charge out of the detector, which causes every channel on that FEB to falsely trigger as the capacitor regains charge, causing a rectangular pattern in the display. This phenomenon, called flash, was an unexpected result of the equipment, and hence was not included in the simulations. I worked to incorporate the flash effect into the simulations used by NO ν A, and in the process discovered, elsewhere in the code, an inconsistency between the behavior of the simulation and reality.

¹NSF PHY-1460882

Jaclyn Schillinger
Univ of Alabama - Birmingham

Date submitted: 31 Jul 2015

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