FLEX Group Meeting

Date: 10 January 2024

General Group Notes

> Attended: Matt King, Angela White, Lee Hagaman, Avinay Bhat, Domenico Franco.

Many people traveling next week - Lee, Angela, Domenico, Avinay

Following week is DUNE collaboration meeting (Angela, Matt, Domenico will attend) - likely cancel that as well.

Next meeting Jan 31st.

Bonnie Fleming

- Not present. At PAC meeting at Fermilab for SBND requesting POT.

Domenico Franco

- Antonio is flying to Chicago, wants to remind Lee to attend Italian conference - important to him.

- Lee to discuss travel funds with Bonnie

- Was on vacation until last Monday - spent New Year in Michigan.

- Still deciding whether or not to go to CERN next week.

- Antonio should be arriving today.

    - Office near Domenico's.

Avinay Bhat

- Made more progress on optimization for Gaushit finder for SBND.

- Last meeting: Hit finding on SBND has not been optimized for anything: tracks, showers, or blips

  - Thanks to Lynn: tracked down hit-dumper fcl to get integral info for fitted waveform.

  - Now trying to make meaningful comparison between integral of deconvolved waveform and charge given by Gaushit. Then vary the 3 parameters to optimize for minimum "difference" between them.

- Reached out to Mike Mooney and Linyan regarding calibration project. Signal processing with Hanyu using WC - very close to wrapping is up. Next big task is calibration. Avinay accidentally picked a project that someone else was doing, so he will go back and ask for a new one.

- MicroBooNE decommissioning setup. Drilled holes into pieces of setup. Will lower camera into MicroBooNE to take pictures. With Luigi, devising something to move the camera to cover full solid angle and orientations. Wants camera to talk to mobile phone to see live view before taking a photograph. Waiting for go-ahead from MicroBooNE spokes to put camera in and take pictures. Flash important to take pictures of broken wires and TPB. Need UV light flash to see TPB.

  - Conclusion draw from TPB being anywhere - can explain light yield decline qualitatively in MicroBooNE. TPB is a wavelength shifter on the face of the PMT to shift wavelengths to visible spectrum for the PMT to see.

Lee Hagaman

- Papers and to-do lists for axial mass analysis and cross section analysis

- Working on NC Delta analysis. Comparing uncollapsed and collapsed covariance matrices to track down differences. Still debugging. Partially understood plots - list of things that look good or weird, but none that tell a complete story.

- Going to England, then Neutrino24, possibly going to nuInt in Brazil.

- Giving update at MicroBooNE osc meeting on Friday

Angela White

- All systems go on validation. Need to produce a whole bunch of stuff for good statistics.

- Using edepsim to simulate particle gun straight down into 2x2 detector. Muons with spread of energy.

- Running NDflow (to convert events into data-like file) takes hours. Angela will run 1 long file (as opposed to several) to try to make the workflow faster.

Matt King

- Main two thrusts: LArIAT work and ICEBERG

    - LArIAT picking up momentum, goal to present at DPF in May.

    - ICEBERG should maintain momentum, goal to present at next DUNE collaboration meeting.

    - Avinay offered to help me to parse through the ADC → mV conversion for ICEBERG signals necessary to sending Wenqiang Gu (from BNL) my noise spectrum.