

# FLEX Group Meeting

Date: 07 February 2024

## General Group Notes

Attended: Bonnie, Antonio, Domenico, Lee, Angela, Matt

### Bonnie Fleming

- For group strategy on 2x2 - UChicago strategy instead of just Fleming group. i.e. including Elise and potentially other UChicago neutrino group members.
- Inquiring about situation with **CRPs and APAs**
  - Flipping on the technology (from APAs to CRPs) is not official, but matter-of-fact (according to Domenico)
  - What DUNE wants, DOE wants, all project partners, then a board votes on it. We're at stage where collaboration has task force which will recommend next week to switch. We don't want a formal recommendation on paper if the DOE would hate it or if the project can't handle it. So foregone conclusion but not written down.
  - Chicago cannot host a CRP factory - do not have the space, even in the current APA factory (according to Domenico)
  - New Discovery Center in Physics between Chicago and France. Bonnie & French folks working on writing down what that would mean. That could include a CRP factory at UChicago. French scientist Cedric moving to Chicago for 2 years. Bonnie is co-director and Cedric is director.
    - Consequence of University of Chicago and CNRS in France.
    - Want to put CRP factory in proposal, so then University would have to provide the space.
    - Game-changing (according to Antonio)

- Domenico can write up a document about requirements and specs for that CRP space.
  - Will involve Ed Blucher in relevant discussion
- Open our minds up in a “find a way or make one” mode
- Will be at Chicago next Tuesday

## Antonio Ereditato

- In Chicago
- Wants to think about group strategy for work on 2×2 rather than lots of people working individually. Both contributions on hardware and what areas of analysis we focus on.
- “First Neutrino Detected by DUNE” - on the 2×2 - published in *Instruments*. Peer reviewed very quickly after starting data run, perhaps within a week.
  - Looking for a “champion” for that paper. Suggesting Angela to be the champion
  - Fast-track, publish immediately after. Raw data plots, no big analysis. Very uncontroversial.

## Domenico Franco

- Asked to write up a document regarding CRP factory requirements at UChicago

## Avinay Bhat

- Not present - at LArTF

## Lee Hagaman

- 5 single-photon analyses have been unblinded, all have seen an excess. Lee has been investigating phase spaces and trying to investigate if this is related to the MiniBooNE excess.

- Could it be some weird NC  $\text{Pi}^0$  XS? Or is it a new photon production source?

## Angela White

- At Fermilab to clean up LArTF - 2×2 fully moved out
- Next week, Livio in town, training Angela and Tom [Murphy] on light system and installing electrical system in the cave.
- Coding work on 2×2, fixing bugs in simulation that were put in by trying to make simulation different for each module. Going well!
- Champion for the 2×2 "First Neutrino Detected by DUNE" paper

## Matt King

- Submit abstract to Speaker Committee for Neutrino 24 for ICEBERG noise work.
- Spoke to SBND XSec working group conveners about a potential thesis topic. Exciting project idea looking at the pion absorption cross section through a ratio of  $1\pi$  and  $0\pi$  interaction cross sections in an enhanced region of phase space. Relates well to previous pion absorption work.
- Working on LArIAT Pion Absorption cross section
- Working on SBND Wirecell coherent noise removal and simulation, similar to previous ICEBERG work the past year.