

nEXO engineering/design meeting

University of Illinois at Urbana-Champaign

Note that the meeting is expected to be in the format of discussions and brainstorming at the board, so for the most parts there are no formal speakers. There will be readytalk, but this may not be very effective, given the meeting format.

Andrea will lead the discussions on TPC designs and Liang will lead the discussions on electronics designs. We will try to cover both topics on the first day as some people can only attend for one day. We will continue the discussions on some topics for both on the second day. The goal is to come up with a baseline design for nEXO TPC and electronics as well as alternative/backup plans. A crucial outcome of the meeting is to identify critical issues that need priority testing for the design to proceed.

Agenda:

March 21, 2014

9:00 Introduction of goals and attendees (Liang)

9:30 Preliminary discussion on TPC designs (Andrea)

-- Charge Collection design: Pads, wires, strips,

-- Light Detection: APD, SiPM ...

-- Light collection: reflectors, transparency of electrodes and field cage, TPC cathode/anode asymmetry,

....

-- Interface with electronics: dead xenon, radioactivity, heat load, feedthrough type and count, ...

10:00 Coffee break

10:15 Discussion on Electronics (Liang)

-- Physics requirements: Charge channel, light collection channel

-- Electronics for charge collection: Pads, wires and Strips: cold vs. warm, digitization rate, noise requirement

-- Electronics for light detectors: APD vs. SiPM: cold vs. warm, digitization rate, noise requirement

-- Connection to power supplies, interface with detector, data rate.

-- System architecture.

12:00 Lunch

13:30 Discussion on Electronics (Liang)

15: 40 Coffee break

16:00 Discussion on TPC designs (Andrea)

18:00 Adjourn

March 22, 2014

9:00 Discussion on remaining Electronics issue (Liang)

10:00 Discussion on remaining TPC issue (Andrea)

11:30 Lunch

13:00 Wrap up

15:00 Adjourn