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| NSCL Proton Detector | |  | | --- | | October 2, 2017 | | 8:30 EST | | Phone Call | |

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| Meeting called by: | Chris Wrede | Type of meeting: | Phone Call |
| Attendees: | Chris Wrede (CW), Lolly Pollacco (EP), Moshe Friedman (MF), Tamas Budner (TB) | Note taker: | Tamas Budner |
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## Minutes

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| Agenda item: | Testing the Gating Grid |  |  |

#### Discussion: We discussed the purpose of the copper rings. Lolly is unsure and would like to see the pictures of the gating grid (GG) with the rings. He suggested we should talk to Patrick about how to install the GG. Lolly asked what the diameter of the field cage is and told us to send him a schematic of the resistances of the field cage. The ring should definitely be at the same potential as the last potential step on the field cage. Need to provide a contact with possibly two resistors, but we should verify this with David.

#### Conclusions:

Send field cage and GG drawings to Lolly. Copper ring should be in equipotential with the end of the field cage.

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| Action items | | Person responsible | | Deadline |
| * Send pics/schematics to Lolly | | MF | |  |
| * Get in contact with John Yurkon about gluing rings | | TB | |  |
| * Double-check with Patrick/David about design specs | | CW | |  |
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| Agenda item: | Lolly’s Visit |  |  | |

#### Discussion: Chris and Lolly discussed when would be the best time for Lolly to come to NSCL. Early June would most likely be optimal for the experiment. July will be a busy month, but a second best choice would be early July. As for Lolly visiting in December, maybe the middle of the month? However, this is highly dependent on when he has surgery.

#### Conclusions: Unsure exactly when Lolly will visit. Dependent on several factors. Shooting for mid-December and if not early June, then early July.

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| **Action items** | | **Person responsible** | | | **Deadline** |
| * Keep in touch with Jill Berryman about beam scheduling | | CW | | |  |
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| Agenda item: | Simulation of the Amplification and Drift Region | |  |  | |

#### Discussion: Moshe wanted to know how important it is that we have a detailed simulation of what the electric field looks like inside our detector. Lolly thinks that incorporating this into our detector simulations will be difficult and not particularly useful. He suggests we compare the gain we see in simulation with results reported in literature. He thinks our detector should be within 30-40% of the gain in literature. Lolly also says we should look at the tension on each of the field cage rings, especially those close to the GG to see if the field is uniform.

#### Conclusions: The purpose of the simulations is to determine whether to increase or decrease the tension along the field cage in order to optimize detector performance.

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| Action items | | Person responsible | | | Deadline |
| * Compare simulated gain with gain from the pancake | | TB | | |  |
| * Check with CERN to find size of gap between pads and mesh | | CW | | |  |
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| Agenda item: | Tests with Uranium Source | |  |  | |

#### Discussion: Moshe talked about the possibility of using the uranium source in the Proton Detector. Lolly pointed out that the range of alphas in the argon-isobutane gas is about 4 cm, and so we would only see a partial track. However, Moshe and Tamas pointed out that we would like to see what the charged particle signal will look like in DDAS and that this is worth trying, to which Lolly agreed. Lolly suggested that we increase our operating pressure in order to reduce the range of the particles in the gas. This will reduce the gain, but we are not too concerned about resolution at the moment.

#### Conclusions: Proceed with testing alpha source. Try taking data with different gas pressures.

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| Action items | | Person responsible | | | Deadline |
| * Check out 232U source when available | | MF | | |  |
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| Agenda item: | Broken Pad | |  |  | |

#### Discussion: Lolly thinks the black spot on that pad that isn’t working might not be from a spark. He suggests we pulse the mesh and see if there is a signal in the burnt out pad and its neighbors. We should also use a voltmeter to check to see if there’s a short between the pad and the mesh. Lolly doesn’t think the pad is killing the preamp channels.

#### Conclusions:

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| Action items | | Person responsible | Deadline |
| * Pulse the mesh and look for signal | | TB |  |
| * Measure resistance between input (mesh) and output (pad) | | TB |  |
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## Other Information

We still have not received the two new Micromegas from CERN. Get in contact with them to see when they will be sent. Lolly thinks that he might have a few tricks that could improve the resolution the Proton Detector but wants to wait on this until she shows up later this year.