

E08-027/07 Collaboration Meeting (9/30/2010)

Open Issues and Action Items

Evaluate the effect of radiation from the local dump on Hall equipment.

Finalize Milestones/Timeline from now to start of experiment.

Finalize Runplan.

Establish running conditions for ‘no-septa’ optics (low rate). Use a thicker target? Higher current? Different local dump?

Finalize all significant contributions to the systematic error budget. Need this quickly to establish design requirements.

Tabulate expected analysis topics. Compile list of tasks and manpower. Identify any orphaned tasks.

Ensure that promised user contributions are delivered. Establish ‘shopping list’ of items to be purchased, and work to be done by user institutions. For now, we need several new fluke 271 waveform generators for the slow raster. G. Ron can probably provide atleast one.

Follow lessons learned from SANE operation (O. Rondon’s talk).

Decide whether to dedicate time to Compton runs. They will require a survey of articulating beamline each time. Will need to have thicker target windows, and will boil Helium.

Any changes to the half wave plate status should require notification to all Halls. Write this in as a request of the accelerator operations.

Target-specific tasks: evaluate the NH₃ material budget. There will be 400W of mostly heat radiating from dump. Will the target’s 1W fridge handle this? Yves would like a better field map from Oxford, or a clear idea of the limits of the existing map. Can the recent modifications change the field map? Is it possible to include 3rd target cup on the stick?

Manpower

There are several regular weekly meetings of the active onsite people.

T 8:30am : Accelerator and Instrumentation group.

T 2:30pm : Design/engineering.

Th 1:30pm : Target group.

W : Post-docs and students.

The active user groups are listed below:

Post-docs : Kalyan Allada and Jixie Zhang are working significantly on g2p now. Their primary goal is to modify the Hall A montecarlo. Further possible contributions are anticipated from : Narbe K. and Hovannes B. (UVa), Sarah Phillips (UNH), Xiaohui Zhan (Argonne), Vince Sulkosky (MIT). The level of involvement is not yet known.

Graduate Students : Pengjia Zhu (USCT), Min Huang (Duke), Melissa Cummings (W&M), Chao Gu (Uva). Min is currently working on optics and rates. Chao is working on the target stick at Uva. Pengjia is working on energy loss calculations for target irradiation.

Physicists actively working on the project: A. Camsonne, J.P. Chen, D. Higinbothan, G. Ron, K. Slifer.

Future : Rutgers is hiring a post-doc in March. UNH is hiring a post-doc this Fall. Expect atleast one grad student from UNH. Tel-Aviv and Jerusalem will have 1-2 graduate students between them. We will need atleast 1 post-doc and 2 students dedicated primarily to the target. In addition, there needs to be a group of well trained target personnel. Collaborators are encouraged to send students/post-docs to UVa for training, and to JLab when the target is being commissioned in the EEL. There will be a 2 week cooldown at UVA in the Fall.

General Notes

There are three primary reasons that g2p will run: 1) Favorable PAC rating, 2) PSI proton charge radius results, 3) promised user contributions. Flat funding is likely in 2011, but the impact on g2p may be reduced because it is running at the start of the fiscal year.

The tentative date of the next collaboration meeting is Dec. 14, 2010.

Fast raster should be used in addition to the slow raster to effectively cover the whole target. Analogy: Fast raster plus slow is like spiral with magic marker vs spiral with sharp pencil. Oscar: No SEM in SANE. Don't need it now. We will rely on the slow raster ADC.

Power supplies have been identified for all beamline instruments (FZ1 and FZ2 magnets in particular)

Al has 3 FTEs working on g2p until the end of Feb. This should be sufficient. The local dump will be machined out of tungsten block ($\sim \$2K$), $12 \times 4 \times 16$ cm 3 . A wider dump would be better to contain the transverse envelope. Maybe useful to have a second block above the beamline with cutout or movability. Dump should/will have temperature sensor. Will indicate that we have hit the dump. It will be best to run 3.3 GeV last, since it will activate the dump most. Helium bag will extend to the target window. It has a simple design, and will probably be held in place with tape.

Delivery of the magnet is expected by the end of year. There is no cross talk of target cells expected due to the large cup separation, and with coils embedded in the material. Nist is probably available for irradiation, FEL will be very expensive. 0.1% loss of target field is expected every 48 hours. The uwave source has 1% tunability. There is also a tube suitable for operation with 4.7 T field.

Target projects needing development: 1)Ceramic cups. 2)Microwave feedback system.