

Weekly Report for 01/05/2015

APS Renewal and Upgrade

- Worked on different stripline parameter configurations (length, gap, and pulser voltage). (Aimin Xiao)
- Summarized injection simulation results. Updated CDR including new results and comments from editor and M. Borland. (Aimin Xiao)
- Discuss with Melike on Lambertson septum simulation. (Aimin Xiao)

MCR Operations

Storage Ring Operations

- Worked with A. Brill (DIAG) and C Doose (MD) to set up fast beam loss monitors detectors for SCU1. (Jeff Dooling)
- Will move six-pack hardware from ID33 to ID1, including PS and signal cables. Discussed moving HV PS (Emco) from S33 to S1 with S. Shoaf and R. Diviero (AES-CTL). (Jeff Dooling)

Linac Operations

- Went through historical files of the APS thermionic rf guns (files transferred from Nick Sereno). Found drawings with dimensions of the coupling cell cavity of the 3rd generation RF gun. Gave a copy of the drawing to Xiang Sun and Discussed with Xiang Sun about the more accurate modelling of the coupling cell. Plotted LLRF measurement of 3G3 gun and send the data to Xiang Sun for his simulation to match with measurement. Worked in the vacuum lab to take more external dimension measurements with Xiang on 3G3. (Yin-e Sun)
- Discussed with colleagues from AWA about possibilities of collaboration for the design and fabrication of a new thermionic rf gun for APS, once funding is available. (Yin-e Sun)
- Discussed linac startup and possible injector studies with Stan Pasky. (Yin-e Sun)

APS Machine Research and Development

Storage Ring Research and Development

- At the request of N. Sereno, held meeting to discuss possible BLM collaboration with ITech/Libera. Participants included Sereno, Yang, Harkay, and Dooling. (Jeff Dooling)
- Sereno with look into ordering a single FPGA unit for investigation. (Jeff Dooling)
- Checked CPU multipole center measurement results. Discussed with Louis on what should we do with its realignment. (Aimin Xiao)

Linac Research and Development

- Worked on laser transport modeling for input to Zemax program. (Jeff Dooling)
- Discussed with Bill Jansma about the alignment of the PC Gun spectrometer (~0.5 deg on both pole surface) during his alignment of the newly installed PC gun spectrometer beamline. Discussed with Terry Smith and Jeff Dooling about modifications of the laser enclosure in the linac optical table to allow the proper alignment of the spectrometer YAG screen cube. (Yin-e Sun)
- Discussed with Bill Berg on the offset from optimal location of the gun spectrometer screen (<1 cm) in longitudinal location due to the larger size of the cube compared with the straightline YAG screen cube. (Yin-e Sun)

- Discussed with Jeff Dooling about drive-laser scan schemes for future laser cathode cleaning. Visited AWA drive laser final alignment table in the tunnel. (Yin-e Sun)
- Discussed PC Gun spectrometer beamline quadrupole installation for proper location and polarity with Terry Smith. (Yin-e Sun)

APS Machine Software

AOP Applications Software

- Worked on issues with space charge calculation when user setup beam charge using macro particles. (Aimin Xiao)

Publications, papers and report

- Drafted a highlight for APS PC Gun for the APS annual report. (Yin-e Sun)

Meetings, workshops, conferences, committees, LMS related, and reviews

- Prepared talks summarizing studies: 1) Laser measurements to support pc gun commissioning in the linac and 2) ID1 BLM measurements. (Jeff Dooling)
- Arrange and hosted a Photo-injector Physics meeting. (Yin-e Sun)
- presented PC Gun in APS linac slides at the group meeting. (Yin-e Sun)
- Discussed with Terry Smith on the PC gun and Tcav slides for MAC review. (Yin-e Sun)
- Drafted APS Linac parameter page for Sasha Zholents for MAC review. (Yin-e Sun)
- Attended B&A Seminar. (Yin-e Sun)

Safety and Required Training

- Completed HR498, Ethics training and ESH114PR, LOTO training. (Jeff Dooling)
- Took training on ESH114PR; HR720; JHQ100. (Aimin Xiao)
- Took training of ASD102, ESH223, HR720. (Yin-e Sun)

Miscellaneous

- Tracking all injector maintenance activities including Work Request and CCWP's. (Stan Pasky)