Weekly Report for 05/05/2014

Highlights

• Reviewed a paper for PRSTAB that had been re-submitted. (Kathy Harkay)

• Posted Rev 2 of MBA ray tracing technical note (APS_1445054). (Kathy Harkay)

APS Renewal and Upgrade

• Finished first draft of singleBunch chapter in CDR. (Ryan Lindberg)

• Started catching up with the physics issues, design considerations, and student duties related to the impedance test stand. (Ryan Lindberg)

• Continued reading papers/books to get up to speed on impedance calculations. (Ryan Lindberg)

• After the MBA physics meeting, I decided to compute the phase space ellipse for the BM dipole US end (from local orbit distorion (LOD) analysis) and analyze how it transforms thru the dipole. The US ellipse has a negative tilt, as M. Borland noted. The extreme points on the US ellipse major/minor axis transform to the DS ellipse minor/major axis. The transformed ellipse overlaps the original DS ellipse, as one would expect. In the process of this exercise, I realized I had incorrect alpha values for the AM dipole in the technical note. I revised the TN and MBA physics presentation. Only AM ray tracing numbers & Fig. were affected. (Kathy Harkay)

• Contacted G. Hoffstaetter regarding the latest status of his fast-ion instability R&D at CesrTA. Reviewed his publications. (Kathy Harkay)

MCR Operations

Storage Ring Operations

• Continued to watch SCU0 warmup and cooldown and ensured that the data were logging. Generated a plot of chamber temperature vs vacuum pressure for discussion with H. Cease. (Kathy Harkay)

PAR Operations

• Coordinated, reviewed and validated maintenance changes. The Par Harmonic 1 Control System has been updated and new medm screens have been implemented. (Stan Pasky)

• Testing of StartUp/Switch PEMtool for the Harmonic/Fundamental systems have been optimized, with new operating files. (Stan Pasky)

Linac Operations

• Coordinated, reviewed and validated maintenance changes. The Linac L1:WS1 water system has been updated followed by medm screens have been validated. (Stan Pasky)

• Testing of StartUp/Switch PEMtool for the Harmonic have been optimized, with new operating files. (Stan Pasky)

• Coordinate the efforts between operations and staff for installing the PC Gun and the beam line components in the linac tunnel. (Stan Pasky)

ITS Operations

• Coordinated, reviewed and validated maintenance changes in the Injector Test Stand (ITS). (Stan Pasky)

• The ITS interlock control system has been updated and relocated in the klystron gallery. System

was test and responded as expected. (Stan Pasky)

• PCGun Testing (Stan Pasky)

• ITS Corrector LTS:V1, H1 - is now positioned between the PCGun solenoid and the Gate valve, this is temporary. (Stan Pasky)

• The installed LTS:H1-V1 corrector as well as all beamline magnets/power supplies were tested and are working as expected. (Stan Pasky)

• Temporary sliders have also been provided at Physicist request for the PCGun magnets on the Injector Test Stand medm display, (LARRY_RFGun.adl). (Stan Pasky)

Training

• Completed tunnel walkthrough training for one new APS Linac Operator. (Stan Pasky)

• Completed - (Stan Pasky)

• ASD124 CONTROLLED ACCESS TRAINING FOR OPERATORS (Stan Pasky)

• ASD125 APS Lockout/Tagout (Stan Pasky)

• ASD102 Tunnel Safety Training (Stan Pasky)

• Completed - a short online survey of organizational communications. (Stan Pasky)

APS Machine Studies

Storage Ring Studies

• Submitted list of SCU0-related machine studies for startup. (Kathy Harkay)

APS Machine Research and Development

Storage Ring Research and Development

• Held initial discussions with M. Erdmann on updated ray tracing studies for the S35DCCT move. We will meet again next week to go into details. (Kathy Harkay)

ITS Research and Development

• Corrected Q3-Q4-YAG1 screen distances in the ITS beam line. Emittance analysis of test data from April 16 is complete and verified against the quad scan results, next step is to consider the effects space charge. (Jeff Dooling)

• Received cathode cleaning data from M. Trovo, Elettra - Sincrotrone Trieste. (Jeff Dooling)

• Assigned to do shielding evaluation for the PCGun. (Jeff Dooling)

• Working with S. Shoaf (AES-CTL) to properly synch cameras for the laser and pcgun beams. Odd/Even field issue (odd field from the first frame, but then camera is free running). (Jeff Dooling)

• As the laser beam is focused more tightly in the VC needed to add back the polarizer attenuator upstream of the VC camera. (Jeff Dooling)

Other Research and Development

• Cathode R&D: Participated in a telephone conference call with Wayne Hess and Karoly Nemeth on a superconducting photocathode idea. (Kathy Harkay)

• CathodeR&D: Located R. Rosenberg's UV lamp for use in AWA. Retrieved the original UV lamp from Z. Yusof (IIT) (who is managing the AWA analysis chamber), and asked J. Wang (AES/PS) if someone in his group could diagnose the problems with both power supplies. Had initial discussion with G. Sprau (AES/PS), who set up the original lamp. Organized a power-up test next week with both Z. Yusof and myself present. (Kathy Harkay)

• Electron cloud R&D: Recommended new data analysis for L. Boon's QE paper and discussed it with her. (Kathy Harkay)

APS Machine Software

Injectors

• worked with Shifu on new IOC for computing the booster IRamp deltaI/I rms, booster IRamp gain and delay, and tested with current referene waveform. The new IOC is ready in use now. (Hairong Shang)

• updated the booster ramp correction software to use the new PVs in the new IOC. And added "Load IRamp Reference" button for loading the reference waveform, reference gain and delays into reference PVs. (Hairong Shang)

• updated Booster SCR to include the new PVs for IRamp. (Hairong Shang)

• added logging some pv values to ITS PC Gun Phase scan, and ITS emittance measurement script per Yine's request. (Hairong Shang)

Simulation Software

• spent most of time working on estat, adding force integration per CY's request. Tested with line and arc segments, it works as expected now. And freed huge memory leaks in estat, which used to eat up compute memory after several runs. (Hairong Shang)

Publications, papers and report

• Posted a revised technical note, correcting the AM dipole parameters. (Kathy Harkay)

• Discussed an IPAC2014 paper with Y. Ivanyushenkov on SCU0 operation. (Kathy Harkay)

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

• Prepared list of possible speakers for APS colloquium comittee. Invited Paul Emma to give colloquium in Oct. (Ryan Lindberg)

• Reviewed a re-submitted paper for PRSTAB and submitted report. (Kathy Harkay)

• Attend - (Stan Pasky)

• Bi-weekly Tcavity / PCGun meetings and monthly PiP meetings. (Stan Pasky)

• SR studies meeting Thursday (Stan Pasky)

Miscellaneous

• Taken vacation for the entire week. (Aimin Xiao)

- Performing heat study on the PCGun diagnostic leg dipole. (Stan Pasky)