

Weekly Report for 03/16/2015

APS Renewal and Upgrade

- MOGA optimization on 36 pm V6 lattice with reverse bends. (Yipeng Sun)
- MOGA optimization on alternate lattice with reverse bends, emittance 64pm. (Yipeng Sun)
- Evaluations of MOGA solutions. (Yipeng Sun)
- Continued on Touschek beam loss simulation. (Aimin Xiao)
- Prepared injection simulation with longitudinally mismatched injection beam. Wrote a tech note on assumption made. (Aimin Xiao)

MCR Operations

Procedures

- Reviewed several procedures for annual review (Randy Flood)

MCR Operations administrative/misc.

- Wrote operator shift schedules for after the upcoming shutdown (Randy Flood)
- Worked on getting compensation straightened out for the operators (Randy Flood)
- Approved operators' time cards (Randy Flood)
- Approved vacation requests, set up coverage and updated the online schedule (Randy Flood)
- Approve CTLs, IT and Other work requests (Randy Flood)

APS Machine Studies

Storage Ring Studies

- 3rd resonance study on hybrid lattice. (Yipeng Sun)
- Half integer resonance study on hybrid lattice. (Yipeng Sun)
- ID4 physical aperture with BPM setpoint. (Yipeng Sun)
- Performed orbit switch from hybrid to RHB. (Aimin Xiao)
- Discussed with Bingxing on vertical beam size measurement. (Aimin Xiao)

Linac Studies

- Participated in RG1 tune up study with S. Pasky on Tuesday. RG1 cathode heater power appears to be limiting the current from the RG1 cathode. For acceptable current output, the RG1 cathode is requiring 30 W. (Jeff Dooling)
- Observed 3G3 conditioning tests in the ITS conducted by S. Pasky on Thursday. Cathode heater power of 37 W was first applied with a DC supply by J. Hoyt and W. Michalek of the MOM group prior to the introduction of rf power. (Jeff Dooling)
- Cathode appeared to activate; vacuum pressure rise was roughly the same seen in RG1. Received Hoyt's data for review. (Jeff Dooling)

APS Machine Research and Development

Storage Ring Research and Development

- Obtained initial MARS results for a single-bunch beam-strike on the SR thin septum. (Jeff Dooling)
- Visited Building 314 with K. Harkay to look at final placement of FO fast beam loss monitors in the SCU1 cryostat. (Jeff Dooling)

Linac Research and Development

- Measured pump diode current waveforms from the pgun laser amplifier eDrive unit directly comparing two current probes; also recorded pump diode light output. (Jeff Dooling)
- Diode light output appears to be down from levels originally measured in October 2013. Swapped light detector with newly purchased device of the same model and saw similar results. (Jeff Dooling)
- Measured pump diode spectra vs. pump current to look for spectral shifts with current. (Jeff Dooling)

APS Machine Software

Storage Ring

- did machine study with Kathy to setup the FPGA bpm with injection trigger for beam loss monitoring, however, could not get it work; first, there were several bps were not able to be triggered; after switching to 10 seconds and switching back to injection trigger, none bpm were able to be triggered. -- Next day during user operation, found out that the trigger event value were 125, and some bps were left with injection trigger; The problem was that the event value should be 45 instead of 125 for injection trigger, therefore, modified FPGABpmTurnHistory script to set the event values for all kinds of the triggers. And manually switched the FPGA bpm triggers to mps dump for user operation and changed the trigger event values to 45 using the buttons on FPGABpmTurnHistory script. To make sure that the FPGA bpm triggers were correctly setup for user operations, added the trigger event PVs to SBPMs SCR. (Hairong Shang)
- looked at the orbit switch pem problem that the default lattices were not switched -- did not find the problem. But added log message to before and after lattice switch, and added two more tags: Host and Action to default lattice auditor to help debugging. (Hairong Shang)
- did 4x4 S27/28 feedback study with Nick Sereno and Shifu Xu. (Hairong Shang)
- modified the SetupTrigger button in FPGAbpmTurnHistory so that it changes the trigger event value for all triggers to make sure that the event for selected trigger is correct. And changed to collect long waveform by default; and changed to plot only selected files by fileIndex, fixed typo and corrected the initial value of post-trigger for long waveform. (Hairong Shang)

Injectors

- wrote mergeBoosterRampTable for CY's experiment to create a new ramp table after corrector bump scan. (Hairong Shang)
- studied BTS charge efficiency with CY using ExperimentDesigner, (Hairong Shang)
- created booster IRamp reference for SD and SF for different chromaticities to improve booster corrector ramp. (Hairong Shang)
- modified BRampControlAutoCorrection: increase the gain and delay tolerance for security check of generating IRamp reference per CY's request. (Hairong Shang)

- made StripTool running in background in Booster4CorrectorBumpScan. (Hairong Shang)
- improved booster lattice switch pem: corrected VRamp lattice switches due to the directory structure changes. (Hairong Shang)

General

- continue improving sddsfresnel, added more features. most features are working now. (Hairong Shang)
- added Host and Action tags to defaultLatticeAudit for lattice switch logger to APSMpSRSetup.tcl, APSMpSRSwitch.tcl and SRSetDefaultLattice. (Hairong Shang)
- With assistance from R. Soliday wrote a script to calculate laser beam width at the output of the regen cavity. This result will then be used to calculate the focal length and ultimate beam waist within the cavity. (Jeff Dooling)

IOC/EPICS/Controls/Linux/Solaris/Linux Clusters/Data Loggers/Simulation software

- Administer the EPICS CVS repository to ensure current versions are installed and conflicts are tracked down and eliminated. (Randy Flood)

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

- Participated in a conference call about operator compensation (Randy Flood)
- Served on RSPPC during AES-SI proposal to upgrade ACIS (Randy Flood)
- Met with AES-SI about proposed changes to LEUTL ACIS (Randy Flood)
- Met with AES-IT and AES-SSG about problems with Java applications not working correctly (Randy Flood)
- Participated in ISO9000 audit (Randy Flood)
- Presented stats and operational issues to Ops Directorate meeting (Randy Flood)

Safety and Required Training

- Monitored annual tornado drill (Randy Flood)
- Took ESH training on HR498 and SEC101 (Aimin Xiao)

Miscellaneous

- Administer multiple mailing lists and the elegant forum (Randy Flood)
- Made machine study schedules (Aimin Xiao)