

Weekly Report for 12/08/2014

APS Renewal and Upgrade

- APS upgrade CDR: alternate lattice section. (Yipeng Sun)
- Drafted a fast kicker feedthrough evaluation procedure. (Chih-Yuan Yao)
- Proposed to increase the fast kicker transverse dimension by 20%, which can significantly reduce difficulties in development and vacuum pumping problem. (Chih-Yuan Yao)
- Updated both injection/extraction and injector modification sections of CDR. (Chih-Yuan Yao)
- Measured PAR tune shift vs charge, which showed positive shift. This indicates strong incoherent slow ion effect. (Chih-Yuan Yao)
- Continue worked on CDR writing. Finished first complete draft on injection simulation, will update it using new simulation results. (Aimin Xiao)

APS Machine Studies

Storage Ring Studies

- Prepare ExperimentDesigner setup for fractional tunes scan, on lifetime and injection efficiency. (Yipeng Sun)
- Performed dry runs. (Yipeng Sun)
- Join coupling studies with VS. (Yipeng Sun)
- Measured BPM offsets for new ID installation: P1 at ID4 and ID35; BP3/4 for 1BM, 6BM and 35BM. (Aimin Xiao)
- Save desired beam orbit at different fill pattern and beam current, this is for SCU1 commissioning. (Aimin Xiao)

Booster Studies

- Tuned up 132-nm booster lattice in I-Ramp mode for operations and studies. (Chih-Yuan Yao)

PAR Studies

- Performed PAR beam ion effect study with Kathy Harkay. (Chih-Yuan Yao)

APS Machine Research and Development

Storage Ring Research and Development

- Investigated SR tune measurement system hardware and found a disconnected drive amplifier. It was due to miscommunication. (Chih-Yuan Yao)
- Studied ways to make a sample pattern scan tool for the P0 feedback system, which automatically detects the right sample pattern and delays. (Chih-Yuan Yao)

Booster Research and Development

- Proposed a test of the new upgrade booster corrector ramp control module in the coming run. (Chih-Yuan Yao)

PAR Research and Development

- Performed radiation survey with HP group for high charge operations. (Chih-Yuan Yao)

APS Machine Software

Storage Ring

- tested SR unified steering with Nick and Louis, it was successful, the next step is to automatically generate the unified steering matrix based on two configuration: DP orbit correction and RTFB correction. Started working on SR Unified Steering GUI application. (Hairong Shang)
- discussed with CY on developing scripts for 1) determine bucket sample pattern 2) scan and obtain the proper setting of the attenuators (one for each plane) in order to avoid analog signal saturation. 3)optimize setting of the mixing delays 4) optimize setting of the sample delays. (Hairong Shang)

Injectors

- improved AcquireLinacWaveforms so that user change the plot range. Debugged the problem that the collected waveform data seemed messed up, it looked like the EPICS IOC was not correctly connected with the scope channels, contacted control personal for help. The scope also had problem that it gave stronger reflected power signal than forward power. (Hairong Shang)
- updated linac PC gun phase scan script due to hardware changes. (Hairong Shang)

General

- fixed an error in DataLoggerViewer when plotting to output file, which complained that apsScrolledStatusVar(lastPlotCommand) variable was not defined. (Hairong Shang)
- helped Yipeng Sun with designing SR tune scan experiment with ExperimentDesigner, wrote script for generating knob scan files that will be called by ExperimentDesigner to do two-dimensional scan of tune x and tune y. (Hairong Shang)

Publications, papers and report

- Published: Performance of nominal V6 lattice with canting scheme, AOP-TN-2014-057, Yipeng Sun. (Yipeng Sun)
- Submitted two abstract to IPAC15. (Chih-Yuan Yao)

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

- Read SCU1 readiness review material. Served as a member of review committee. (Aimin Xiao)