

# Weekly Report for 05/12/2014

## Highlights

- Wrote down CDR for MBA injection section and MBA lambertson magnet section. (Aimin Xiao)
- Prepared machine startup schedules. (Aimin Xiao)

## APS Renewal and Upgrade

- Summarize simulation results with various injection errors. Submitted new simulation run based on obtained results. (Aimin Xiao)
- Updated CDR MBA injection section with new simulation results. (Aimin Xiao)
- Wrote down Lambertson magnet section of the CDR implementation part. (Aimin Xiao)

## APS Machine Studies

### Storage Ring Studies

- Began drafting tech note on SCU0 beam loss studies with K. Harkay. (Jeff Dooling)
- Investigated ID04 caused orbit perturbation history over the past 2 years. Confirmed that the error comes from field coupling between nearby PM canting dipole fringe field and ID gap. This will be corrected during next shut down. Asked ID4 users the most likely ID gap value for their experiment. Asked hairong to update the ID gap reference file. (Aimin Xiao)
- Checked IEX PS polarity display task progress with Boris and Marty. (Aimin Xiao)
- Installed saved startup file to UBOP and BPM offset reference file. (Aimin Xiao)

## APS Machine Research and Development

### Storage Ring Research and Development

- Worked on SCU1 geometry for input to MARS. (Jeff Dooling)

### ITS Research and Development

- Worked on getting laser beam size smaller on the VC; goal is less than 0.2 mm rms in both x- and y-planes. Presently obtaining 0.17 mm, rms in x and 0.28 mm, rms in y. (Jeff Dooling)
- Focused beam in transport box using telescope. (Jeff Dooling)
- Installed 1000 micron pinhole at the output of the transport box. (Jeff Dooling)
- Presented laser results at PIP meeting. (Jeff Dooling)
- Obtaining 25-30 microJoules of UV energy on photocathode (EM3). (Jeff Dooling)
- Received cathode cleaning data from M. Fedurin, BNL ATF; data shows strong dependence of QE on background pressure. (Jeff Dooling)
- Working with T. Lutes (AES-IT) to see if we can get the Coherent LaserCam to communicate with a linux-based laptop via wine. BeamView s/w works with wine; now need to communicate with camera h/w. (Jeff Dooling)

## APS Machine Software

## Storage Ring

- added monopulse and bergoz bpm type to FPGAbpmTest per HBUI's requests. (Hairong Shang)
- update ID gap reference file due to ID4 change and new IDs (S27 and S35). (Hairong Shang)

## Injectors

- update PTB charge PV name due to PV name changes in Booster4CorrectorBumpScan and boosterLongRespMeas. (Hairong Shang)
- modified BRampControlAutoCorrection to check the delay error before generating IRamp reference, nothing will be done if the delay error is greater than 0.2, this avoids generating bad reference. (Hairong Shang)
- tested and debugged booster new soft ioc for booster IRamp correction, helped Shifu corrected the IOC code. (Hairong Shang)
- updated Booster SCR to be able to save the IRamp reference waveform, and set it to be read only so that it does not break other applications like booster PEMs. (it did break down the booster PEM because of these new added waveforms when they were not being assigned to read only). (Hairong Shang)

## General

- installed estat for force computation after fully testing. (Hairong Shang)
- added parameters argument to APSLogButtonCommand to log the arguments of the command. (Hairong Shang)
- added log command for "RESTORE" snapshot button of SCR. (Hairong Shang)
- added catch error statements to setCMOffsets and display error message to setCMOffsets so that user would know what kind of error occurred when it occurs. (Hairong Shang)
- debugged controllaw problem, that the GUI disappeared and gave segmentation fault error when "start", "resume", "suspend", or "abort" button was clicked, it turned out to be pv mon command does not work with the new oagwish8.6 because oagwish8.6 is built with tthread on but "pv umon" is not thread safe, changed back to use oagwish 8.5. (Hairong Shang)

## Miscellaneous

- Took 1 day vacation off (Aimin Xiao)