Meeting Minute (by Chandra Bhat)

Subject: PSP Taskforce Meeting

Date/Time: 20210114, 1:30 pm

Attendee: PS, External Beam Delivery Dept., RF, PIP-II, …

Speakers: CY Tan, Aaron Fowley, (John Johnstone’s talk is scheduled next time)

**Tan:**

1. Mentioned/welcomed Daniel Jones new PD to PS Department and said that he is being trained under Dan and Pat.
2. Summarized work being done and highlighted a few.
   1. Kiyomi’s test on LINAC klystron is in progress
   2. Jeff Eldred and John Johnstone’s work on ½ integer stop-band Booster lattice is also in progress. Jeff discovered that swapped H&V IPM data. Now the data make sense and observe horizontal scrapping.
   3. Eliana has joined the Booster lattice work with Jeff and John.
   4. 2nd Harmonic rf cavity work is also progressing well. Planning to install in the Booster during coming summer shutdown.
   5. Wide-bore cavity: Modifications to tuner decided. End ferrites to be removed and replaced with Al rings.
   6. RF phase measurements indicated more issues. On 1/20 we plan another dedicated study.

**Aaron:** Talked about BAR (Booster permanent magnet Accumulator Ring)

1. BAR: No showstoppers; first pass detailed lattice calculations
   1. Assuming permanent magnets with 1’x1’ cross section a 485.49 m storage ring can be installed in the existing Booster Ring.

Kent: raised a concern about the current Booster lighting. Solution: displacement.

* 1. Nearest magnet center to wall distance 37.8 cm. This is not an issue
  2. 10 m long straight section with 24 super periods,
  3. Presented detailed BAR lattice.

Tan: commented about the zero chromaticity

* 1. Presented a parameter table.
  2. Suggested that dipole pole tip field=0.25 T at 800 MeV. Each dipole is split into two with a space for third, if added can be made a 1GeV BAR.
  3. Chosen material for permanent magnet: Samarium Cobalt
  4. Some MADX tracking results were also presented
  5. Showed some results from off momentum chromatic correction sextupoles. To zero out chromaticity using two families of sextupoles.
  6. A new figure of merit called PUFF is introduced

1. RCS: first pass detailed lattice
   1. Needs a separate tunnel
   2. Presented a transition less lattice
   3. Presented a parameter table: Einj= 2 GeV and Eexit= 16 GeV
   4. Also talked about sextupole placement in the RCS lattice.

Chandra: In what way this lattice is different from Jeff’s lattice for the RCS?

Response: This lattice is imaginary gammaT lattice. Where as Jeff’s lattice has real gammaT But pushed way up the injection energy of the downstream machine.