

Minutes of PITZ Physics Seminar, 20.05.2021

Project: PITZ

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Agenda:

- 1) Talk by S. Philipp: Rearrangement of low section for charge measurements
- 2) AOB
- 3) G. Georgiev: Data analysis report: Quick DLW experiment results
- 4) X. Li: THz beam dynamics study in Run 4
- 5) M. Krasilnikov: BPM studies at PITZ & FLASH

Results:

- 1) Talk by S. Philipp:
 - a. MK: Which corrector magnet would have to be moved? Low.St2
 - b. FS: Can one support the double diagnostic cross to fit the corrector?
 - c. AO: Could one put the corrector on the DF40 tube? SP: Cooling will collide with the frame
 - d. FS: No, we mean you have to rebuild the corrector. SP: Okay, but there would be still bolts and nuts, so the space is insufficient. Corrector should be moved slightly downstream. It is now already moved downstream by ~ 10 mm.
 - e. MK: Sinbad has smaller diameter, so one would have to create an adapter to use the Sindbad toroid
 - f. SP: XFEL toroid is available right away, while Sindbad toroid would have to be manufactured first
 - g. Option 2 needs removal of dark current monitor
 - h. Option 3 collides with lead shielding wall -> Lead wall would have to be moved
 - i. MK: Can we have two lead walls, where the first one has a hole for the charge measurement device, and the second lead wall shields radiation from the opening? SP: Would be a complicated solution
 - j. FS: Perhaps put dark current monitor before the shielding, and the toroid behind?
 - k. Could lead shielding be further upstream, with the dark current monitor behind?
 - l. FS: We'll not have two Turbo-ICT's
 - m. FS: Dynamic attenuator for bergoz ICT so that high charge measurements still are possible
 - n. AO: I would first install XFEL toroid to compare with our ICT. Do installation in steps to crosscheck devices. FS: Yes, could make sense!
 - o. MK: Dismounted ICT should be then used in beamline downstream

- 2) AoB:
 - a. Collaboration Board Meeting: Send overview slides until next Tuesday
 - b. FS: I got feedback from several people. Clarification on different curves done
 - c. Remaining holidays: Holiday from 2020 has to be taken until end of September, or it will expire!
 - d. FS: Ideas on new measurements brought up by Artem
 - e. Updates on time machine? GV: No news.
 - f. FS: Mikhail, please ask for updates on black mask for collaboration meeting
 - g. Monday is a public holiday

- 3) Georgi:
 - a. Vertical slit for better energy resolution does not make sense. HQ: It was for better time resolution
 - b. GG: We go with 1.1 nC into DLW, 800 pC make it to High1.ICT1 (to be rechecked with documentation)
 - c. AL: Why does the lower image has a yellowish background? These are only slightly analysed images, exact reasons to be found

- 4) Xiangun:
 - a. FS: What effects could have 2D space charge on simulations? XKL: 2D SC only considers azimuthal charge distribution during tracking
 - b. FS: Without spatial filtering: Pinhole was put into laser beamline to improve transverse laser distribution. Why was it removed? MG: One of the laser amplifiers was broken, we had to get more laser power, removal of pinhole was way to go
 - c. MK: Anyway always check the transverse laser distribution on VC2
 - d. FS: It makes sense to repeat this experiment with a better laser distribution if we have the beam time.

- 5) Mikhail:
 - a. FS: Hamburg people are working on it? MK: I asked for it.
 - b. FS: How strongly do these features stopping us from using our BPM's? I'd like to use them! MK: I think measurement of the first bunch of the train is reliable.
 - c. FS: How strongly is the effect compared to our numbers? Can we get intra-train information from BPM's at PITZ? In LEDA pulse train profile property is factor 30 smaller than from BPM's

Protocol prepared by
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