eRHIC IR Design Meeting

Draft Minutes for Friday, December 6, 2019

1 First look at vacuum chamber design—C. Hetzel

Postponed till next week due to technical difficulties [section 6.1, item 1].

2 Update on layout—K. Hamdi

Title: "EIC-IP6-LATTICE"
File: EIC-IP6-LATTICE.pptx

1. Building CAD model of 6 o'clock.
2. E. Aschenauer: We should start including "Ring Inner" and "Ring Outer" labels in our plots and diagrams for those not familiar with the RHIC layout (e.g. JLab people).
3. Dimensions of cryostat box are arbitrary and should not be treated as definitive [slide 3]. (It doesn't include all of the magnets that would actually be inside of it.)
4. V. Ptitsyn: Is a corrector scheme included?
   (a) H. Witte: This is based on v. 5.1 of the electron ring, which does not include a corrector scheme.

3 B1pF Conceptual Design—S. Plate

Title: "B1pF Conceptual Design"
File: Conceptual Design B1pF.pptx

1. High stress at lead end sections, much lower in central section [slide 2].
2. SST shell is ∼6 mm thick [slide 3].
3. The lavender yoke blocks are ∼2 in thick. Only two such blocks are shown; in actuality, they fill the dashed region. [slide 3]
4. E. Aschenauer: If everything is in one cryostat, we can't include movable collimators in the region, which (based on experience from HERA) we may need.
5. Magnets at 1.2 K? [slide 3]
   (a) H. Witte: Q1a, Q1b, and Q2.

4 Physics update: luminosity monitor—J. Adam

Title: "Luminosity monitor for the EIC update on photon exit window"
File: JA-Lumi_20191206.pdf

1. E. Aschenauer: Beam pipe is just a drawing; it can be smoothed out [slide 2].
2. Tilted exit window is currently flat, unlike the beam pipe it is on the side of [slide 2].
3. E. Aschenauer: Will check pCDR values for beam size at IP and make simulation parameters consistent [slide 6].
4. S. Peggs: What about other exit window materials?
5. Possibly use a perforated beam pipe like in RHIC.

5 All other business

5.1 RHIC coordinate system conventions

Title: "Accelerator Physics coordinate conventions"
Subtitle: "RHIC/AP/12"
File: RHIC_AP_12.pdf

6 Next Meeting: Friday, December 13, 2019 from 2:30 to "3:30" p.m.

6.1 Draft Agenda

1. Update on vacuum chamber—C. Hetzel
2. Update on layout—K. Hamdi
3. All other business