

EIC IR Design Meeting

Draft Minutes for Friday, July 10, 2020

Agenda

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1 Summary of beam envelope discussion—C. Hetzel

Title: “IR Meeting 200710”

File: [IR Meeting 200710.pptx](#)

1. R. Palmer’s comment from the last meeting about double counting in the envelope was correct. This has been fixed for today’s slides.
2. R. Palmer: The 30σ in y probably comes from particular cases in which the beam is smaller and therefore has a greater clearance in σ compared to the worst case scenario, which is the case the β^* values used with the 15σ in x and 22.5σ in y come from.
3. H. Witte: According to V. Ptitsyn’s table, the worst case scenario is the 5 GeV electron beam on 100 GeV proton beam (the 5 GeV electron beam on 41 GeV proton beam scenario has lower β^* values).
4. Q. Wu: The 50 mm inner radius for the crab cavities is correct.
 - C. Hetzel: Will remove the question mark from “Crab cavity 50 mm radius?” on [slide 1].
5. Tapering Q1eF could cause problems with synchrotron radiation [slide 2].
6. Q0eF design will need to be worked on: need to make sure detectors can be removed and that beam pipes etc. do not interfere with acceptance.

2 Electron Polarimetry—Z. Zhang on behalf of Friends from Physics

Title: “The Compton polarimeter in IR6”

1. W. Christie: Where does $\sigma_{\gamma,y} = 1.3\text{ mm}$ come from [slide 9]?

2. $\sigma_{e,y}$ and $\sigma_{e,x}$ refer to the the projection of the electron beam via the Compton photons, not the electron beam itself, hence the lack of any deflection effect in the formulas to propagate it from the IP to distance D from the IP.
3. E.C. Aschenauer: Polarimeter at IR-12 isn't feasible, hence the move to IR-6.

3 All other business

None.

4 Draft agenda for Friday, July 17, 2020 from 2:30 to 3:30 p.m.

1. Q0 and Q1 sanity check
2. CDR section update and status
3. All other business

Contact H. Witte or W. Christie to be added to the agenda.