

# eRHIC IR Design Meeting

Minutes for Friday, July 12, 2019

**Present:** Holger Witte (Chair), Elke Aschenauer, Alexei Blednykh, Kyle G. Capobianco-Hogan, Bill Christie, Gary McIntyre, Christoph Montag, Bob Palmer, Vadim Ptitsyn, Guillaume Robert-Demolaize, Steven Tepikian

## Agenda

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## 1 Presentation on the path to a CD1 Design by Holger

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1. Elke: BPMs should include masks [slide 2].
2. Elke: What level of stray field in the electron line would be tolerable [slide 3].
3. Bob: Will need correctors to compensate for effect of central solenoid on electron beam.
4. Having issues with simulation run time and convergence; multicore Opera license would be expensive [slide 5].
5. Still need to figure out why Guillaume’s matching has higher gradients than Holger’s [slide 7].
6. Prioritization Matrix: Everything is urgent [slide 10].
  - (a) Bill: This is for a CD1 within a year.
  - (b) Holger: Yes, Ferdinand said we can expect CD1 by April.
7. Elke: Need electron matching before simulations can proceed.
8. Elke: Need layout for IR12.

9. Stephen: Don't have electron matching solution yet. 18 GeV converged.
10. Bob: Will need an intermediary step that doesn't satisfy anyone's requirements, but is at least more realistic than the pCDR.
  - (a) Christoph: Stephen should send Elke whatever he has at the moment.
11. Bob: We still need to look into the impact of decreasing the  $y$ -divergence of the electrons.
  - (a) Mike Sullivan would like  $25\sigma$  in vertical (rather than  $15\sigma$ ), which could be achieved by decreasing the  $y$ -divergence.
  - (b) Vadim will present on this at meeting after next.
12. Elke: Need to integrate a fast trigger for the beam dump to protect detectors.

## 2 Update on Electron matching by Stephen Tepikian

Tabled, see section 1, item 9.

## 3 AOB

### 3.1 “eRHIC IR Chamber Design”—Alexei

1. Need to reduce impedance and heat in IR chamber where the beam pipes split.

## 4 Next Meeting: Friday, July 26, 2019

### 4.1 Draft Agenda

1. Stephen—Update on Electron Matching
2. Holger—Task List for CD1 and Milestones

## 5 Meeting After Next

1. Vadim will present on functional impact of decreasing  $y$ -divergence of electron and hadron beams on luminosity.