

Magnetic shielding meeting: 2013-02-20: 15:00 GMT

CR4, R1 (phone conference details circulated)

Present: JT, IT, CP, MC, PH, KL, JW, PS, KM, LF, MG

1. Actions:

- **KL:** Liaise with ISIS to set up joint meeting after Christmas.
KL will pick this up once more and try and get a Doodle or circulate a mail.

2. Magnetic model of MICE Hall:

PS

- PS has tried to replicate a field with and without a yoke in the "Bio Savart" case. This has been done using models 51 and 52. Results seem similar to the HW models in the FEA case, but, in the Bio/Savart case PS's results are higher than those that HW obtained. Whereas HW got 60-70 microTesla but PS gets around 110 microTesla. So, different and needs to be checked, but, the conclusion that West Wall location is OK seems still to be valid.
- Similar approach being taken to checking Rack Room 2. PS has been making vector plots so that he has magnitude and direction of the field. Trying to understand the observed variation of the fields in the Rack Room 2 area.

3. Magnetic model of tracker cryostat

KM

- Just getting to grips with the problem. Information gathered from CMacW. KM knows the field limits on the components to which he is working. He has an idea for a "single-large-can" approach to the shielding solution. Put a box or can the size of a phone both that the cryostat will go into. There would be a door for access.
- The single, most-demanding component, the lid heater box, can take only 15 G other components have higher field limits. The next most sensitive component is the cold-cathode gauge which can stand 75 G. MC expresses the opinion that the cold-cathode gauge could be fitted with its own specially made shield. Also, possible to locally shield the turbo pump. MC can provide quote from Leybold for shielding pieces and alternate gauges.
- Turbo-pump shields are the business of "Magnetic Shields" a company in West Sussex.
- Possible to have a thin box of 1010 steel and then consider muMetal to complete shielding.
- **Actions:**
 - **IT:** Take information on local shielding from MC to CMacW to see if we can consider testing the shields in R9.
- KM will continue with phone-box solution for now.

4. Magnetic model of racks and R9

MG

- MG has been on VF's course and has been working towards a description of the meshing she wishes to use for the rack model. Work still in early stages, but, hoping that the rack model can be built in stages;
- Also has been liaising with VB about development of R9. VB will send MG the comi file for R9. There may be limitation to the R9 model, but MG will be able to take this forward.

5. Partial return yokes: magnetic analysis and design

HW

- JT has CAD model for shield from S.Plate at BNL and will take a look at it to begin to look at clashes during the week.
- JT has also released drawings for the West Wall mezzanine.

6. Schedule and plans, discussion

CMacW

- A. Grant has begun to look at the schedule implications of implementing the shields. Some news will be released when it is available.

7. DONM:

27Feb13; 15:00 GMT

Propose MICE/ISIS magnetic field meeting – to be defined

8. AoB

- Day/time of weekly meeting:
 - We agree to propose Tuesday 15:00 for weekly meeting.
- Missing from the agenda is the validation. For the moment IT/CP will own the agenda item. Comments from CP:
 - VB has sent new data from her model using an integration method. The new data appeared to be in worse agreement with the measurements. This may be to do with the coordinate systems. The differences are being worked on.

Summary of actions:

- **KL:** Liaise with ISIS to set up joint meeting after Christmas.
- **IT:** Take information on local shielding from MC to CMacW to see if we can consider testing the shields in R9.
- **KL:** Add validation agenda item for future meetings.
- **KL:** Propose Tuesday 15:00 GMT as regular.