

International Muon Collider Design Study



Accelerator Design meeting

Monday 22/05/2023, 16:00 – 17:30

(<https://indico.cern.ch/event/1271455/>)

Chair: Daniel Schulte

Speakers: Daniel Schulte

Participants (zoom): 35
Antoine Chancé, Anton Lechner, Bernd Stechauner, Chris Rogers, Christian Carli, Claude Marchand, Claudia Ahdida, Daniel Schulte, Daniele Calzolari, Dario Giove, David, David Amorim, Donatella Lucchesi, Elena Fol, Elias Métral, Fabian Batsch, Francisco J Saura, Fulvio Boattini, Hans S-M, Heiko Damerou, Ivan Karpov, Ji Qiang, Kevin Ronald, Kyriacos Skoufaris, Liang Zhang, Luca Bottura, Mark Palmer, Massimo Casarsa, Max Topp-Mugglestone, Nadia Pastrone, Paula Desire, Phil Burrows, Roger Ruber, Samuele Mariotto, Scott Berg.

MEETING ACTIONS

1: All IMCC WG Leaders and MuCol WP Leaders (and all other people involved)

All the relevant people should have access (please tell me if I need to add some other people) to the Overleaf Document on Parameters (see <https://www.overleaf.com/project/61c964cd97ae7f106627d3ed>) and should now:

1) Have a close look to the structure and send me any feedback to add/change/remove some chapters

2) Send us / confirm the name of the people who should be responsible for the writing and follow-up of the chapters

=> Many thanks in advance for your swift follow-up (as Daniel would like to discuss this at the Annual Meeting in Paris/Orsay mid June)

1. NEWS (DANIEL SCHULTE)

- Some future events:
 - o Muon4Future (29-31/05/23): <https://agenda.infn.it/event/33270/>
 - o NuFact 2023 (21-26/08/23): <http://nufact2023.snu.ac.kr/>
 - o FFA'23 (10-15/09/23): <https://www.bnl.gov/ffaworkshop/>
 - o HB2023 (09-13/10/23): <https://indico.cern.ch/event/1138716/>
 - o COOL23 (09-13/10/23): <https://cool23.web.cern.ch/>
- As already discussed last Monday (in the absence of Daniel), Daniel mentioned that the P5 discussions in the US are very interesting with in particular a very good presentation by Diktys Stratakis, very technical and work oriented, with an important ramp-up of FTE / year.

2. DISCUSSION ON PARAMETERS (DANIEL SCHULTE)

- Daniel reminded everybody about what he expects for the parameters => See everything explained in detail in his slides https://indico.cern.ch/event/1271455/contributions/5407015/attachments/2651139/4590237/Parameters_may_2023.pdf
 - o Need to build a database with tentative parameters
 - ⇒ Will iterate to arrive at consolidated parameters for the strategy

- ⇒ Important to get the structure of the data right, numbers will change
- o If there are strong opinions, we can change and clarify the definition of the high-level parameters but for the moment we should stay with the goal of slide 8
- o Discussion about muon bunch charge => See slide 12
- o Discussion about muon beam emittance => See slide 13
- o Conclusion (**see also Action 1**)
 - ⇒ Everybody and area leaders
 - Review if required parameters are foreseen in the document
 - Or can some be removed?
 - ⇒ Area leaders and other experts
 - Fill in best guesses where possible
 - Provide scalings and justification
 - ⇒ Need this to have time before the annual meeting to go through the numbers
 - ⇒ Will then review the parameters data-base
 - ⇒ Later will introduce formal method to update parameters
 - ⇒ Need to also handle alternatives
- Reminder: For MuCol, we need a set of parameters for late August, early September.
- Discussion
 - o ScottB was surprised by the 2-sigma transmission (on slide 12) but FabianB mentioned that indeed in the longitudinal plane they cut at ~ 2 sigmas to fit the bunch inside the bucket. Other considerations could be applied for the transverse plane.

3. COLLECTIVE EFFECTS (DAVID AMORIM)

- Postponed to next meeting.

4. AOB (EVERYBODY)

- Next meeting will take place on Monday 05/06/23: <https://indico.cern.ch/event/1283569/>.

Reported by E. Métral and D. Schulte