

International Muon Collider Design Study

List of Actions for the Accelerator Design meetings

Chair: Daniel Schulte

MEETING HELD ON 01/03/2021

- | | |
|--------------------------------|--|
| 1: Magnet working group | Try and answer to Peter McIntyre's question: is their new solenoid technology of interest for optimizing μ -cooling scenarios? |
| 2: Muon collaboration | Think and propose possible test facilities (to be discussed during the coming workshop on 24-25/03/2021). |

MEETING HELD ON 08/03/2021

- | | |
|---|--|
| 1: Everybody | Send names of speakers to Roberto Losito for the Muon Collider Testing Opportunities (https://indico.cern.ch/event/1016248/) on 24-25/03/2021. |
| 2: Particle Physics team? | Clarify the origin of the neutrino energy distribution in the rest frame of the decaying muons. |
| 3: Particle Physics team? | Clarify the origin of fraction of neutrino energy going into to inelastic interactions. |
| 4: D. Schulte, C. Carli and D. Neuffer | Understand the origin of the difference of a factor 1.5 in the radiation level between the formulae of B.J. King obtained in (https://arxiv.org/pdf/physics/9908017.pdf) and another of his papers (link to be added in the future => See minutes of meeting held on |

15/03/2021).

MEETING HELD ON 15/03/2021

- 1: C. Curatolo and D. Lucchesi** Discuss the past MDI considerations concerning muons in particular for CLIC, with Helmut Burkhardt and the CLIC detector people (similar subject studied and it was a big concern).

MEETING HELD ON 29/03/2021

- 1: Everybody** Look at our website (<https://muoncollider.web.cern.ch/welcome-page-muon-collider-website>) and send any comment to Elias (many thanks in advance!).

MEETING HELD ON 12/04/2021

- 1: Kenneth Richard Long** Following a question from PhilippeL, why is there no cost estimate for the “utilities” in the overall cost estimate for nuSTORM (and what should it be)?
- 2: Elias Métral, Ilias Efthymiopoulos, Simone Gilardoni** Check possibilities of a high-power proton beam at CERN, either from SPS or PS, with different pulse lengths (based on an estimate from DanielS, $\sim 100 \mu\text{s}$ is the time we have and one should try and see what would be the maximum number of protons we can send during this time).

MEETING HELD ON 19/04/2021

- 1: Marco Calviani (from the previous meeting)** Establish some contacts with Mu2e (at FNAL) and COMET (at JPARC) concerning the target/solenoidal system.
- 2: Chris Rogers and Daniel Schulte** Define what the cooling demonstration should be and estimate the corresponding cost.
- 3: Manfred Wendt** Think about what could be done for the instrumentation to measure a low-intensity beam of muons (few $1\text{E}5$ in a bucket and few $1\text{E}8$ in all

buckets).

MEETING HELD ON 26/04/2021

- 1: Muon Beam Panel** Produce an interim report for the LDG by end July 2021 (instead of September as initially planned).
- 2: Chris Rogers** Send a first set of relevant parameters for the cooling.

MEETING HELD ON 03/05/2021

- 1: Jean-Pierre Delahaye** Finalise/check the list of main relevant parameters all along the muon collider chain and send the “final version” to Elias such that this information can be stored on our website and be available for all the community.
- 2: Everybody** Contact Daniel (and Elias) if you would like to have some seminar(s) before the 1st Community Meeting.

MEETING HELD ON 10/05/2021

- 1: Everybody (and in particular a convener for a WG)** Answer to the questions raised by email to discuss them and conclude at the second conveners’ meeting this Wednesday.
- 2: Jean-Pierre Delahaye and Mark Palmer** Try and send to all of us the list of parameters to be used for the different stages of the muon collider chain (as the 1st Community Meeting will take place next week).

Reported by E. Métral and D. Schulte