

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).
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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!).
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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).
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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).

MEETING HELD ON 31/05/2021

- 1: Daniel Schulte** Decide on the exact date and format of the 2nd Muon Community Meeting (current proposal: 3 consecutive days, July 12-13-14, between 14:00 and 18:00).
- 2: Everybody** Continue to progress in the different Working Groups and prepare the 2nd Muon Community Meeting in July.

MEETING HELD ON 14/06/2021

- 1: Roberto Losito** Try and estimate the cost of the 2 proposed options by Chris, as this will be essential to guide further discussions and see what we can afford (and what we cannot).
- 2: Marco Calviani** Confirm, or not, some predictions about the effect of the bunch length on the thermal shock, which depend on other factors as well, and quantitatively establish the potential limits: do we need to go down to bunch lengths of ~ 1-2 ns or could ~ 100-200 ns be OK?
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| 3: Everybody | Continue to progress in the different Working Groups and prepare the 2 nd Muon Community Meeting of July 12-14. |
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MEETING HELD ON 13/09/2021

**1: Everybody /
conveners**

Following the recent decision from the LDG to discuss the deliverables and rough cost of the work programme already on September 22, please send updated info to Elias and Chris asap (ideally before coming Muon Beam Panel meeting on 16/09 at 14:00).

2: Elias and Chris

Organise a meeting this Friday 17/09 to discuss the results of Action 1.

Reported by E. Métral and D. Schulte