

Accelerator Design meeting

Monday 26/09/2022, 16:00 – 17:00

(<https://indico.cern.ch/event/1204059/>)

Chair	Daniel Schulte
Speakers	
Participants (Zoom)	Alexej Grudiev, Andrea Bersani, Antoine Chancé, Anton Lechner, Bernd Stechauner, Cary Yoshikawa, Chris Rogers, Daniel Schulte, Daniele Calzolari, David Amorim, Donatella Lucchesi, Elena Fol, Francisco J. Saura, Henryk Piekarz, Ivan Karpov, Jean-Pierre Delahaye, John Hauptman, Kyriacos Skoufaris, Mark Palmer, Peter Sievers, Rob van Weelderen, Roberto Losito

Meeting Decisions

None.

Meeting Actions

None.

1. News (Daniel Schulte)

- SPC and Council being held at CERN on week of 26th September. The Muon Collider design study will be mentioned, with a description of the timeline, budget, design tasks and limitations.
- **EU design study:**
 - Chair of the collaboration board will be elected at the end of the week.
 - Members from the design study are invited to the collaboration, as well as those who signed the MoC. US members will also be invited, names of representatives have to be found.
 - A budget increase from CERN (including in terms of personnel) is on the rails for next year.
 - R. Losito added that the EU design study collaboration agreement has been sent to the institutes, waiting for feedback from the them (deadline is next week).
 - Deadline for sending the document is 28th October (all signatures should be obtained a few days before).
 - A **kick-off meeting for the design study** will take place during the **week of 16th January**.
- **Collaboration meeting (11-14th October)**
 - Agenda is now online: <https://indico.cern.ch/event/1175126/timetable/#all.detailed>
 - The **registration fee has been waived** (social dinner must be paid apart, see <https://indico.cern.ch/event/1175126/page/26287-social-event-dinner-payment-information>).
 - There will be a Zoom broadcast, but one should still register to obtain the Zoom links: <https://indico.cern.ch/event/1175126/registrations/>
- **Snowmass:** V. Shiltsev indicated that the global report will soon be released. Then P5 process will follow the Snowmass process.

2. Round table (Everybody)

- Francisco Saura: studies on the proton target, investigating liquid lead and target size reduction.
- Chris Rogers: first steps of a lattice for the muon cooling section, focus on the acceptance optimization before reaching the emittance target.
- Elena Fol: continued work on reproducing and completing the results previously obtained for the cooling sections.
- Bernd Stechnauer: discussion ongoing on the absorber design.
- Kyriacos Skoufaris: correction of chromatic phenomena in the 10 TeV collider, studies on the beam induced background (BIB) mitigation.
- Danielle Calzola: BIB study using Kyriacos lattice. Most BIB seems located in the final focusing section. Working with the detectors experts to find the limits acceptable on their side.

- David Amorim: follow-up on the RF cavities impedance for the RCS1 (with A. Grudiev, H. Damerau, F. Batsch et al.): TESLA type cavity identified as potential candidate. Also got additional materials suggestions from Peter Sievers for the collider vacuum chamber liner, to be investigated.
- Heiko Damerau: Fabian Batsch presented a study on the number of RF stations in the RCS required to preserve longitudinal stability: $O(30)$ stations seem required. He also presented results on the adiabaticity and emittance growth in the RCS.
- Alexej Grudiev: Discussion on the RF cavities for the RCS, both longitudinal and transverse impedance.
- Rob van Weelderen: work with Luca Bottura on magnet design and requirements.
- Donatella Lucchesi: study the 3 TeV (1.5 + 1.5 TeV) detectors performance. Started to look at the 10 TeV collider detectors performance. Questions are rising on the Monte Carlo generators: are they still reliable at 10 TeV? Also discussions ongoing with Beijing and Sun Yat-sen university which are interested in the detectors physics.

Reported by D. Amorim and D. Schulte