Minutes of the 62nd "ILC-CLIC e+ studies" meeting

Date: 14th (Mon.) March, 2016, 16:15 Jp (Time slot (bn))
The time slot is (bn).
(bn)16:15(Jpn), 9:15(Ukr), 8:15(CET), 1:15(US-IL), 23:15*(US-CA)
(* In US-CA, it is the previous day)

A part of Attendees (whom Omori was able to hear the voices):
Mikhailichenko(Cornell), Louis(CERN), Andriy(Hamburg),
Sabine(DESY), Takahashi(Hiroshima), Kuriki(Hiroshima),
Yokoya(KEK), and Omori(KEK)

Agenda:
1. Central region CFS design for undulator source: Kuriki-san
2. Source session agenda at Santander: Kuriki-san
3. Industrial session at Santander: Takahashi-san

Presentations and Materials:

http://www-jlc.kek.jp/~omori/ILC-CLIC-e+Studies/20160314/
QuestionsToPositronGroup-wAnswers.pdf

http://www-jlc.kek.jp/~omori/ILC-CLIC-e+Studies/20160314/
ELCW.pdf

Summary of the discussions:

1. Central region CFS design for the undulator source:

   Central Region Working Group (CRWG) gave us a homework.
   It was made up of two questions (A) and (B).

   A week before the meeting, Kuriki-san distributed the
   questions, and we made some e-mail discussions before
   the meeting. Sievers-san and Louis-san contributed
   the e-mail discussions.

   Here are the Qestion's by CRWG, and proposed answers by
   Kuriki-san after the e-mail discussions.

   Question (A):
     Is human access to the service tunnel in the
     positron source region necessary when the main
     beam (150GeV) is on?

   Proposed answer to (A):
     • The commissioning has to be made without necessity
       of any access during the operation.
     • Radiation level is controlled to avoid any damages
       on equipment in the service tunnel.

- Radiation level is controlled to allow access to the service tunnel several hours later after the beam is turned off. It is effective to control the radiation dose according to ALARA principle for the unplanned access.

Question (B):
Should the region around the photon/electron dump should also be shielded?

Proposed answer to (B):
Three candidates of the answer were proposed by Kuriki-san.

(1) Shield only the target area: least initial cost, but it could be expensive if additional shield is required in the operation.
(2) Shield down to the photon dump : most initial cost, but no additional cost.
(3) Shield only the target and reserve space for shield : intermediate, but installing shield later might be difficult.

Please look at “QuestionsToPositronGroup-wAnswers.pdf” for details.

We made discussions in the meeting.

(i) Question related to (A):
Can we make access if the beam intensity is low?

- The answer by Yokoya-san:
No. If the main beam is “ON” we should not make access even the intensity is low. The only possible exception is the operation of the auxiliary positron source. When we only operate the auxiliary source, we may employ another access policy.

(ii) Comment related to (B):
We surly need shield around the photon dump, because energy absorbed in the photon dump is larger than energy absorbed in the target and FC.

- Consensus at the phone meeting:
We need shield around the photon dump.

(iii) Comment related to (B):
Suppose we have the shield around the photon dump, is the shield should to be integrated one from the target down to the photon beam? Or can we make two

shields separately at the target and the FC, and the photon dump?

- Discussions:
  We made discussion, but there was no conclusion in the meeting. The answer depends on the cost, the size and the operability. Yokoya-san pointed out that the distance between the photon line and the main beam line (the beam for the collision) is two meters in the current design. If we need more than two meters, it requires extended longitudinal space. The longitudinal extension is required to make the dog-leg larger.

(iv) Question related to (B):
Do we have the design of the photon dump.

- The answer: No.

We asked Kuriki-san that he will make a summary of the discussions in the phone meeting and will ask opinions to people who didn't attend the meeting.
After the phone meeting, Kuriki-san makes a new slide and distribute it to the positron team.
Please look at the post-meeting-material shown at the bottom.

2. Source session agenda at Santander:

Kuriki-san showed a list of the suggested talks at Santander.

- CRWG status and questions to the source group: K. Yokoya
- CR11 status : M. Kuriki
- Target simulation study for Undulator: S. Riemann
- Target study for E-driven: T. Omori
- Target area engineering design for E-driven: T. Omori
- KEKB e+ source status: T. Kamitani
- Radiation study in near of photon dump : A. Ushakov
- Simulation study update of E-driven : M. Kuriki
- Radiation of the target and capture area: T. Takahashi
- Crystalline target update : I. Chaikovskya
- CLIC injector update: S. Doebert
- Joint session with CFS group:

Please look at "ELCW.pdf" for details.

The important point is the allocation of the time slots for the source working group. Current time table doesn't

have the the slots for the source.

Please look at the web-site of the Santander workshop.
https://agenda.linearcollider.org/event/7014/timetable/#20160530

We made discussion on the possible date and time,
and got consensus. The candidates are;
31st(Tue)-May morning, 1st(Wed)-June, and 3rd(Fri)-June.

Kuriki-san will contact Mike-san and Nick-san, and get
the slots and rooms.

3. Industrial session at Santander:

Takahashi-san introduced the “Industrial Session” at
Santander.

The industrial session will be afternoon of 1st(Wed)-June.
It is the first attempt of the LC workshop series to have
an industrial session. People from Spanish and Japanese
industries, and people from Spanish government will attend
the session.

It is Spain-Japan joint event at Santander. But, in future
we hope that we can gradually extend it to an Europe-Japan
event, and finally to a worldwide event.

Reported by T. OMORI

The date of the next meeting is in the middle-end of April.
The exact date will be decided later.

The time slot is (c’)
(c')22:00(Jpn), 16:00(Ukr), 15:00(CET), 8:00(US-IL), 6:00(US-CA)

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Post meeting Material:

A day after the meeting, Kuriki-san made a new slide and
distributed it to the positron team.

You can get the new slide below.

http://www-jlc.kek.jp/~omori/ILC-CLIC-e+Studies/20160314/
QuestionsToPositronGroup-wUpdatedAnswers.pdf

The new slide includes the results of the discussions in the phone meeting. You, especially people who did not attend the phone meeting, are encouraged to give your contributions. Please send your opinions/comments/question to Kuriki-san and Wei-san.

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