Minutes of the 44th "ILC-CLIC e+ studies" meeting

Date: 30th (Thu.) January, 2014, 16:00 Jpn (Time slot (b))
(b) 16:00(Jpn), 9:00(Ukr), 8:00(CET), 1:00(US-IL), 23:00*(US-CA)
(* In US-CA, it is the previous day)

A part of Attendees (whom Omori was able to hear the voices):
Louis(CERN), Eugene(NSC-KIPT), Friedrich(DESY), Sabine(DESY), Andriy(Hamburg), Wanming(BNL), Jeff(LLNL), Song Jin(IHEP), Takahashi(Hiroshima), Kuriki(Hiroshima), Seimiya(Hiroshima), Okugi(KEK), Urakawa(KEK), Yokoya(KEK), and Omori(KEK)

Agenda:
1. Posipol 2014: T. Takahashi-san
2. Capture and Booster Linac Update: T. Okugi-san

Presentations:

http://www-jlc.kek.jp/~omori/ILC-CLIC-e+Studies/20140130/20140130-Takahashi_PosiPol2014.pdf

http://www-jlc.kek.jp/~omori/ILC-CLIC-e+Studies/20140130/20140130-Okugi_Capture300Hz.pdf

Summary of discussions:

1. Posipol 2014:

Takahasi-san presented the status of the Posipol 2014 preparation.

Please look at "20140130-Takahashi_PosiPol2014.pdf.

- Venue:
  Tohoku Area, Japan.
  Probably Ichinoseki City in Iwate Prefecture.

- Jointly hosted by ILC promotion office of Iwate University (TBC).

- Co-chair to be proposed to the IOC.
  Omori and Narita-san (Iwate Univ.).

- Possible Dates (Proposal) :
  (1): Sep 24 –26, 2014
  (2): Sep 10 –12, 2014 (a week after LINAC 2014)

We made discussion on the date.

No one had objection to either (1) or (2).
Sabine said that she preferred (1).

If you have comments/opinions/preferences, please contact Omori.

2. Capture and Booster Linac Update:

Okugi-san reported the update of the capture and booster linac simulation of the 300Hz scheme.

Please look at "20140130-Okugi_Capture300Hz.pdf".

There was big progress since LCWS2013 at Tokyo. Okugi-san found a bug in his code. The field-map of the flux concentrator was wrong in LCWS2013 simulation.

Okugi-san presented the results with the corrected field-map. The results were good. The capture efficiency was better than that in LCWS2013 simulation, with much realistic assumption of the parameters.

Okugi-san pointed out that in the capture section beam loading was twice of that made by positrons. The reason was exstence of electrons. There were electrons in capture section and the population was as same as that of positrons. He pointed out that to separate and throw away the electrons in early stage was important.

He studied with changing various parameters.

- Injection Electron Beam
  - Beam Energy
  - Beam Spot Size
- Positron Converter Target
  - Thickness
- Flux Concentrator
  - Aperture
  - Field Strength
  - Distance between target and AMD
- Capture Section
  - Aperture

- Gradient of RF Cavity
- Beam Energy at the entrance of Booster Linac
- Strength of Solenoid Field

Since time was limited, Okigi-san did not made full study yet. Current study was still in very limited parameter space.

We need to make intense optimization.

Q&As, Comments, and Discussions:

Kuriki-san's question:
Did 3GeV-drive-beam gave better result than 6GeV-beam?

Okugi-san's answer:
No.

Louis-san's Question:
In the Okugi's simulation, accelerating-phase capture and decelerating-phase capture gave almost the same efficiency. However many studies reported that decelerating-phase capture had better efficiency. What was the difference?

Okugi-san's answer:
We didn't know the reason of the difference.

Reported by T. OMORI

The date of the next meeting is 25th February 2014.
Time slot is (c)
(c) 23:00(Jpn), 15:00(Eur), 16:00(Ukr), 6:00(US-CA), 8:00(US-IL)