

Summary Notes of

13th Institute Board Meeting of the CLIC Detector and Physics Study

Held at CERN on 28 August 2018, 12:30 – 13:50

Present at CERN:

Mathieu BENOIT (Geneva University), Igor BOYKO for Alexey ZHEMCHUGOV (Joint Institute for Nuclear Research JINR, Dubna), Phil BURROWS (University of Oxford), Konrad ELSENER (CERN), Esteban FULLANA (Spanish Network for Future Linear Colliders), Wolfgang KILIAN (Universität Siegen), Aharon LEVY (Tel Aviv University), Victoria MARTIN (University of Edinburgh), Ivan PERIC (KIT Karlsruhe), Aidan ROBSON (University of Glasgow), Frank SIMON (Max Planck Institut für Physik, Munich), Nigel WATSON (University of Birmingham), Filip ZARNECKI, (University of Warsaw)

Also present: Lucie Linssen and Philipp Roloff (members of the CLICdp Executive Team)

Attended via VIDYO: Ivanka BOZOVIC-JELISAVCIC (Vinca Institute of Nuclear Sciences, Belgrade), Steven GREEN (University of Cambridge), Alberto RUIZ (Spanish Network for Future Linear Colliders)

Apologies/absences: Konstantin AFANACIEV (Minsk, Bielorrussia), Maximilien Chefdeville (LAPP Anecy), Geoffrey Taylor (Australian Collaboration for Accelerator Science (ACAS)), Joel GOLDSTEIN (University of Bristol), Marcel DEMARTEAU (Argonne), Haluk DENIZLI (Abant Izzet Baysal University (AIBU)), Marco Aurelio DIAZ GUTIERREZ (Pontificia Universidad Catolica de Chile, Santiago), Gerald EIGEN (University of Bergen), Marek IDZIK (AGH University of Science and Technology, Cracow), Tomas LASTOVICKA (Institute of Physics, Academy of Sciences, Prague), Titi PREDA (Institute for Space Science, Bucharest), Ulrik UGGERHOJ (Aarhus University), Joost VOSSEBELD (University of Liverpool), James WELLS (University of Michigan), Leszek ZAWIEJSKI (The Henryk Niewodniczanski Institute of Nuclear Physics, Polish Academy of Sciences, Cracow)

Link to Meeting (Indico page): <https://indico.cern.ch/event/746844/>

1) Welcome to the IB meeting

Victoria Martin welcomed everybody to this 13th CLICdp Institute Board meeting.

Following the last IB meeting, Victoria had asked for input from IB members on the possibility of holding a CLICdp collaboration workshop away from CERN. She had received 11 replies, roughly balanced between "yes", "don't know" and "no point" – for the time being, CLICdp will continue to hold these workshops at CERN.

2) Spokesperson report:

The slides shown by Aidan are on Indico:

https://indico.cern.ch/event/746844/contributions/3087483/attachments/1705460/2747832/clicdp_spokespersonReport_180828v1.pdf

Aidan started his presentation by thanking everyone who has come to the workshop, and pointed out that the 73 registered participants actually constitutes a new record.

a) CLICdp collaboration organisation issues

➤ Working Groups

In the general spirit of rotating roles within the collaboration, Aidan proposed that Filip Zarnecki takes over from Victoria Martin as co-convenor of the Physics Analysis Working Group. Joining Aidan in thanking Victoria warmly for all her work done in this working group, the IB endorsed this change. There are no changes in the other CLICdp working groups.

➤ Publications Committee

The new role of Filip in the Physics Analysis WG entails a change in PubCom, which Filip has been chairing until now – many thanks to Filip for his leadership role and hard work on many papers submitted to PubCom! Aidan proposed Nigel Watson (already member of PubCom) as the new chair – the IB approved this proposal. The IB furthermore endorsed the proposal of Ulrike Schnoor as a new member of PubCom.

➤ Speakers Committee

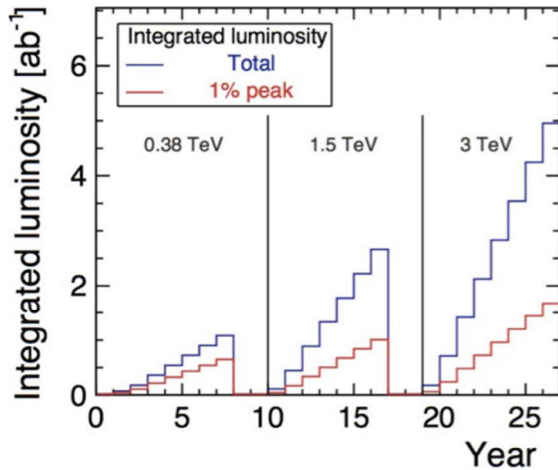
Again in the spirit of rotating roles, Aidan proposed that Igor Boyko be replaced as member of SpeakCom by Emilia Leogrande – the IB endorsed this proposal and thanked Igor for all his work on the committee.

These organisational changes will take effect as of 1 September 2018.

Aidan then informed the IB members that Steven Green is replacing John Marshall as the representative of the University of Cambridge to the IB, since John is moving to a permanent position in Warwick. Congratulations to John, many thanks for the work for CLICdp over the years – with the strongest wishes for a continued collaboration on Pandora PFA, with both Cambridge and Warwick!

b) Updated CLIC luminosity staging and polarisation running scenario

The new scenario had been presented by Aidan in the plenary CLICdp session the same morning – the IB had no further comments to the proposed scenario. For the record, the new staging scenario is shown in Figure 1 (below).



1 ab^{-1} at 380 GeV
 (incl. ttbar threshold scan)
 + 2.5 ab^{-1} at 1.5 TeV
 + 5 ab^{-1} at 3 TeV

Splitting of beam polarisation configurations to maximise the overall physics potential:

- 380 GeV: equal luminosity with +80% and -80%
- 1.5 and 3 TeV: 80% of the luminosity with -80% polarisation

Figure 1: Updated CLIC staging scenario, as presented in the CLICdp plenary session on 28 August 2018.

c) CLICdp Advisory Board Review Report

As in his extensive summary in the plenary CLICdp session, Aidan stressed that this report – with many detailed and very positive comments about the work done by CLICdp – was intended by the authors to be internal and should not be circulated outside of the CLICdp collaboration. If it could be helpful for IB representatives to show a copy of the report privately to e.g. their head of department or institute, then this could be considered. The report will certainly be brought to the attention of the CERN management, most likely “in person” by Lucie and Aidan.

In the discussion, three main points were raised:

- Would it be useful to get a summary of the report, which could become public? It seemed doubtful that such a summary would be useful.
- Could the report be shared with the authors (or the editors) of the forthcoming CLIC physics yellow report? The IB members agreed that – since the recommendation on physics topics are most useful – Aidan should ask the Advisory Board for permission to make this part of the report available to the authors of the yellow report.
- Should the IB submit any “reply” or “answers” to the Advisory Board? Since the final report is already the result of a few iterations between the CLICdp Exec Team and the Advisory Board, it was felt that such an effort would not benefit the process. However, Aidan will reply to the Advisory Board, on behalf of the CLICdp collaboration and IB, with many thanks for the hard work by the members of the board.

Aidan asked whether anyone had additional comments or questions to the contents of the report. One question concerning the implications of the recommendation towards “a formal

connection" of CLICdp with CALICE was asked. Both Frank and Aidan replied that this should be understood as a suggestion for a later stage, should the CLIC detector construction become reality.

d) European Strategy Update (ESU) preparations

The following reports are being prepared as back-up material for the submission to the ESU update:

- Higgs Physics at CLIC (published)
- Top-Quark Physics at the CLIC Electron–Positron Linear Collider (submitted for publication)
- The CLIC physics potential (in preparation as CERN yellow report)
- Detector Technologies for CLIC (in preparation as CERN yellow report)
- A detector for CLIC: main parameters and performance (CLICdp note)
- The Compact $e+e-$ Linear Collider (CLIC) – 2018 summary report (together with the CLIC accelerator collaboration, in preparation as yellow report)

For each of these reports, Aidan presented the outline as well as the editorial team. The normal CLICdp review process will take place for all but the "physics potential" report – since this report has major contributions from theorists, generally not members of CLICdp, the report will be circulated for comments ("light-weight check"). Apart from the summary report, which will be signed by all members of the CLICdp and CLIC collaborations, the author lists of these documents will generally consist of people who contributed to the work and/or writing. IB members will be contacted to provide an updated list of authors for the summary report and for the Detector Technologies report. Non-CLICdp authors will be added by the editors.

The deadline for submission of the yellow reports (to the CERN Reports Editorial Board) is 1 December. Two 10-page submissions (CLIC physics case and CLIC project summary) will be submitted to the ESU – deadline is 18 December.

In the discussion, worries were expressed about the fact that all reports might be finalised "just in time" for 1 December, while the summary report needs the input of all the others well before that time. The typical time reserved for reviewing a CLICdp document will need to be adjusted for these big documents.

Finally, there was concern about the title "The CLIC physics potential", since this might be misleading: one might expect to find a complete summary of Higgs and top physics topics in this report (which is not the plan). The editors are asked to reflect on a different title (or a subtitle clarifying the contents), and proposals to the CLICdp Executive Team are welcome.

e) ESU meeting in member states

Aidan reminded the IB members that they should keep him informed of ongoing ESU discussions in the different countries (presently we are aware of such discussions in Germany, Switzerland and the UK). The final statement, resulting from such discussions in Germany, can be found here:

<http://www.ketweb.de/e199632/e199635/e268373/e296589/Abschlusserklaerung.pdf>

f) CLICdp job opening at Warsaw

The IB members were reminded of a message from A.F. Zarnecki concerning a two-year position in Warsaw.

g) Forthcoming events

- CALICE collaboration meeting 19-21 September, in Shanghai
- FCAL collaboration workshop 4-5 October, in Hamburg
- LCWS 22-26 October, at UTA Arlington, US
- CLIC week 21-25 January 2019, at CERN; the CLICdp part of that week may be slightly longer than usual, to allow for additional contributions by theorists.
- LC "strategy meeting": late March/early April 2019
- European Linear Collider workshop: late spring / early summer 2019
- European Strategy Update Open Meeting: 13-16 May 2019, Granada, Spain

3) A.O.B.

There were no other matters raised.

4) Next CLICdp IB meeting

The next IB meeting will be held during the forthcoming CLIC week. Details will be announced in due course.