



CLICdp welcome and news



Lucie Linssen
CLIC workshop
March 7th 2017

Outline



- CLICdp collaboratrion
- CLICdp at this workshop
- Re-submission of the CLIC Higgs overview publication
- CLICdp plans for the European strategy update
- CLIC and possible ambitions beyond 3 TeV
- Upcoming LC events

CLICdp collaboration



CLICdp

29 institutes from 18 countries

~150 members

Most recent institute joined:

Abant Izzet Baysal University (AIBU) in Bolu, Turkey

Representative: Haluk Denizli

Welcome !

Australia	Australian Collaboration for Accelerator Science (ACAS), University of Melbourne
Belarus	Institute of Nuclear Problems of the Belarusian State University, Minsk
Chile	Pontificia Universidad Católica de Chile, Santiago
Czech Republic	Institute of Physics of the Academy of Sciences of the Czech Republic, Prague
Denmark	Department of Physics and Astronomy, Aarhus University
France	Laboratoire d'Annecy-le-Vieux de Physique des Particules (LAPP), Annecy
Germany	Karlsruher Institut für Technologie (KIT), Institut für Prozessdatenverarbeitung und Elektronik (IPE), Karlsruhe
Germany	Max-Planck-Institut für Physik, Munich
Israel	Department of Physics, Faculty of Exact Sciences, Tel Aviv University
Norway	Department of Physics and Technology, University of Bergen
Poland	The Henryk Niewodniczanski Institute of Nuclear Physics, Polish Academy of Sciences, Cracow
Poland	Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Cracow
Poland	University of Warsaw
Romania	Institute of Space Science, Bucharest-Magurele
Serbia	Vinca Institute for Nuclear Sciences, Belgrade
Spain	Spanish Network for Future Linear Colliders
Switzerland	CERN
Switzerland	Département de Physique Nucléaire et Corpusculaire (DPNC), Geneva
Turkey	Abant Izzet Baysal University (AIBU), Bolu
United Kingdom	The School of Physics and Astronomy, University of Birmingham
United Kingdom	University of Bristol
United Kingdom	University of Cambridge
United Kingdom	School of Physics and Astronomy, University of Edinburgh
United Kingdom	University of Glasgow
United Kingdom	The Department of Physics of the University of Liverpool
United Kingdom	Oxford University
USA	Argonne National Laboratory, High Energy Physics Division
USA	University of Michigan, Physics Department

<http://clicdp.web.cern.ch/content/collaboration>

CLICdp at this workshop



Workshop 2017:

- ~220 registrants (226 in 2016)
- ~80 physics/detector registrants (~67 at last CLICdp 2-day meeting)
- ~50 physics/detector presentations (all plenary)

Topical sessions and conveners:

- **Physics and Analysis** (Igor Boyko, Wolfgang Kilian, Victoria Martin, James Wells)
- **Detector Validation / Detector Calibration and Alignment** (Jean-Jacques Blaising, Philipp Roloff, Matthias Weber)
- **Software** (Frank Gaede, Aidan Robson, Andre Sailer)
- **Vertex and Tracker R&D** (Daniel Hynds, Andreas Nurnberg, Joost Vossebeld)
- **FCAL / ECAL / HCAL R&D** (Marek Idzik, Eva Sicking)

Workshop dinner => Wednesday evening in CERN restaurant R1, included in workshop fee

CLICdp dinner => Thursday evening in St Genis => 47 participants \approx maximum

Unfortunately, no snowshoe outing on Friday, due to weather conditions

Re-submission of CLIC Higgs physics paper



Higgs Physics at the CLIC Electron-Positron Linear Collider

<https://arxiv.org/abs/1608.07538> and [CLICdp-Pub-2016-001](#)

Was submitted to EPJC in August 2016

Comments received from EPJC in Oct 2016:

- Systematic errors
- Detailed questions on various analyses
- Editing comments

Re-submitted to EPJC on 3/3/2017

Victoria Martin, Aidan Robson,
Philipp Roloff, Frank Simon

Principal changes with respect to Aug 2016 version:

- New section dedicated to systematic errors
- Higgs self-coupling analysis => replaced by the recent analysis by Bono and Rosa
 - *Larger statistical error than before, still with room for improvement*
- Correlations taken into account in combined Higgs coupling fits.
- Added a version of combined fit that includes theoretical errors.

Note that:

To avoid public presentation of different versions of our Higgs results, for now please use the plots and figures from <https://arxiv.org/abs/1608.07538>

CLICdp documents

in preparation for next European Strategy



CLICdp reports serving as ingredients for a **CLIC summary report**:

- Updated Baseline for a Staged Compact Linear Collider (380 GeV, 1.5 TeV, 3 TeV) ✓
 - [arXiv:1608.07537](https://arxiv.org/abs/1608.07537), [CERN-2016-004](https://cds.cern.ch/record/2016004)
- Higgs Physics at the CLIC Electron-Positron Linear Collider ✓
 - [arXiv:1608.07538](https://arxiv.org/abs/1608.07538)
- The new optimised CLIC detector model CLICdet ✓✓
 - CLICdp note [CLICdp-Note-2017-001](https://cds.cern.ch/record/2017001) (detector/SW validation in progress)
- An overview of CLIC top physics
 - CLIC top physics publication => complete draft before the end of 2017
- Extended BSM studies (hopefully also motivated by LHC discoveries)
 - CLIC BSM overview publication in 2018
- CLIC R&D report => with main CLIC technology demonstrators
 - Summary publication(s) in 2018
- Plan for the period ~2019-2025 in case CLIC would be supported by next strategy

CLIC and possible ambitions beyond 3 TeV



Exploring ambitious possibilities of:

Initial 380 GeV CLIC collider + extension to $\gg 3$ TeV using new technologies

Explored in a series of meetings, mostly accelerator experts + Philipp Roloff

<https://indico.cern.ch/event/607729/>

(open meetings, see mandate attached there)

Understanding such possibilities may allow to adapt CLIC design to future options

A main concern:

Difficult to accelerate positrons using plasma acceleration techniques

Sample of related questions for the physics:

What about?

- Photon (1 TeV) – proton (LHC) collider?
- Photon – photon collider at 2.4 TeV ?
- Asymmetric electron – positron collisions ?
-

Some upcoming LC community events



CLICdp 2-day meeting, planned for August 29-30 2017 @ CERN

2017

CALICE collaboration meeting, March 22-24, LLR Paris

<https://agenda.linearcollider.org/event/7454/>

Workshop on **top physics at the LC**, June 7-9, CERN

<http://indico.cern.ch/event/595651/>

LC vertex detector workshop, April 30 – May 3, Ringberg Schloss,

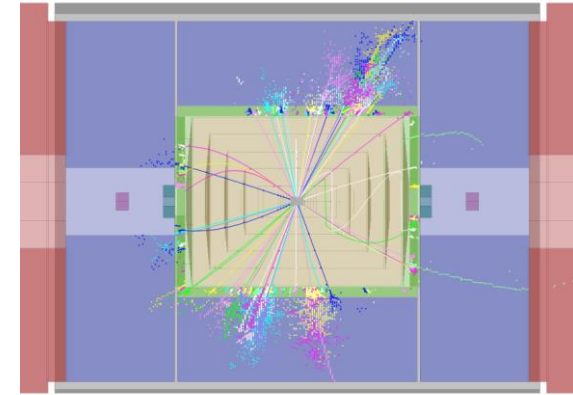
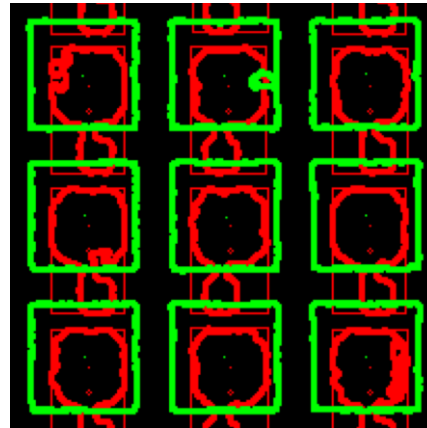
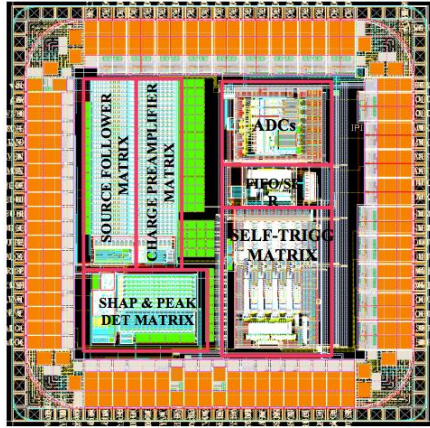
<https://agenda.linearcollider.org/event/7450/>

ALCWS, June 26-30, SLAC

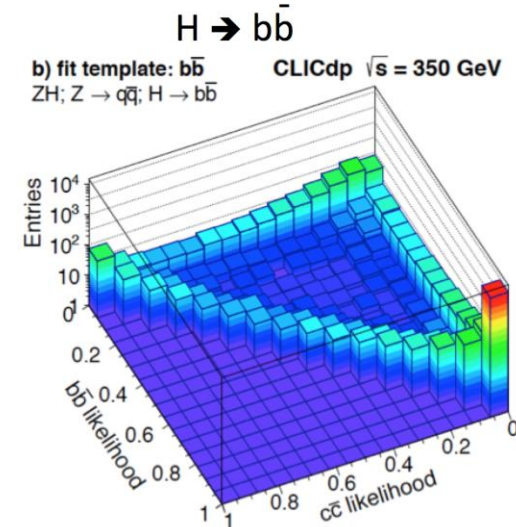
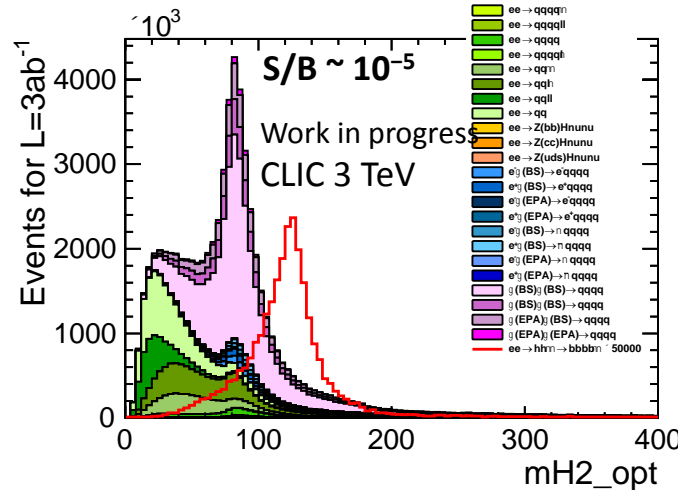
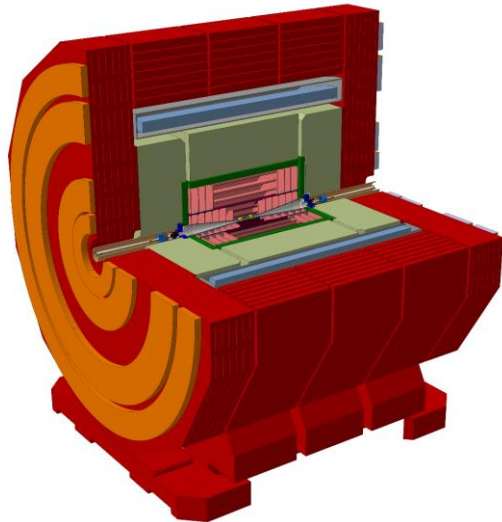
Currently a 2-hour CLICdp session planned on Monday 26/6

Linear Collider workshop LCWS17, Strasbourg, France

Proposed dates: week Oct 23 – Oct 27 or week Oct 30 - Nov 3



Thank you for attending,
and have a nice workshop !





extra slides