General news

CLIC detector and physics meeting at LC2013, May 30th 2013

CLICdp meetings and activities

CLICdp general meetings, working group meetings and activities are open to all !

Attendance is not limited to members of institutes that have signed the Memorandum on Cooperation (aside from restricted meetings, like IB)

The activities of the CLIC detector and physics study have very many aspects in common with ILC activities.

Synergy with ILC activities will be fully exploited, through the existing Concept / R&D collaborations

Organisation of CLIC detector and physics study

Collaboration-like structure, based on a "Memorandum on Cooperation"

Partners join on a "best-effort" basis

http://lcd.web.cern.ch/LCD/Home/MoC.html

MoC partners

Partners who have already joined (17):

Australia:	ACAS;
Belarus:	NC PHEP Minsk;
Czech Republic:	Academy of Sciences Prague;
Denmark:	Aarhus Univ.;
Germany:	MPI Munich;
Israel:	Tel Aviv Univ.;
Norway:	Bergen Univ.;
Poland:	Cracow AGH + Cracow Niewodniczanski Inst.
Romania:	Inst. of Space Science;
Serbia:	Vinca Inst. Belgrade;
Spain:	Spanish LC network;
UK:	Cambridge Univ. + Oxford Univ. + Birmingham Univ.;
USA:	Argonne lab;
CERN	

Discussions ongoing with ~6 additional partners:

MoC implementation

The Memorandum on Cooperation provides (only) crude guidelines towards the structuring of the CLIC detector and physics studies.

Detailed implementation (of e.g. organisation, setting project objectives) will be defined in a flexible way by the Institute Board (IB) and laid down in Annexes to MoC.

Timeline so far:

- Since November 2012 => Partners have been signing the MoC (ongoing)
- January 31st 2013 => 1st *informal* IB meeting
- April 18th 2013 => 2nd *informal* IB meeting
  - Discussion on document publication/presentation guidelines draft
  - Discussion on the election of the IB chairperson

- May 16th => Frank Simon was elected IB chairperson (1 vote/institute, majority of institutes)

- June 11th => 1st *formal* IB meeting

LC workshops and meetings

ECFA Linear Collider workshop, DESY, May 27-31 2013
http://lc2013.desy.de
~20 CLICdp-related talks:
https://twiki.cern.ch/twiki/bin/view/CLIC/LC2013

EPS HEP, Stockholm, July 18-24
http://eps-hep2013.eu/
CLIC Higgs studies => talk allocated (speaker T. Lastovicka)
CLIC BSM physics => poster allocated (presenter tbd)
Top physics at ILC/CLIC => talk allocated (speaker tbd)
Linear Collider vertex R&D => talk, speaker under discussion (ILD/SiD/CLIC)
Linear Collider tracking R&D => talk, speaker under discussion (ILD/SiD/CLIC)
(Deadline for early registration closes on June 7th)

CLIC and USA Snowmass process

BNL (Snowmass) Energy Frontier meeting, at BNL, April 3-6
http://www.bnl.gov/snowmass2103
CLIC was represented by Frank Simon and Lucie Linssen
4 talks were given (Higgs, top, BSM, precision electroweak)

Seattle (Snowmass) Energy Frontier meeting, June 30 – July 3
https://sharepoint.washington.edu/phys/research/snowmass2013/Pages/default.aspx
Philipp Roloff and Sophie Redford *will attend*

Minneapolis (main community meeting), July 29 – August 6
http://www.hep.umn.edu/css2013/
Mark Thomson will attend, + at least 1 additional person

CLIC input paper to Snowmass, *in preparation*
Editors: T. Lastovicka, L. Linssen, P. Roloff, A. Sailer, F. Simon, M. Thomson, J. Wells
See: http://indico.cern.ch/categoryDisplay.py?categId=4679
The paper will be made available for a first review by mid-June

2-day meeting

Please note in your agenda:

October 1+2, 2013

2-day meeting of the CLIC detector and physics study at CERN

Detailed format of the meeting is still to be set up:

- Working groups meeting, of the ongoing WGs and activities
- Additional agenda items, to be coordinated with the groups

NB: there is also a general CLIC workshop foreseen (Jan/Feb? 2014)

Overview of activities ?

Difficult to provide an overview of the activities.
CLIC activities broadly integrated in Linear Collider detector/physics activities

See indico page for overview of Working Groups and dedicated meetings:
http://indico.cern.ch/categoryDisplay.py?categId=1954

Several lively/active working groups !

Physics + SW activities

- **Physics/detector benchmarking** => WG

Next agenda item: P.Roloff/M.Thomson

- **Development/mantenance of core software tools**
  - (for CLICdp formally part of the benchmarking WG)
  - => fully done within the general LC context
  - *There was a common LC meeting on SW tools this morning*

Activites: detector optimisation

Towards a New CLIC Detector Model

C.Grefe 27/5

- CLIC_ILD and CLIC_SiD models frozen for CDR studies (2011): it is time for a new round of detector optimization studies
- Revisit several design decisions with the insight gained over past years
  ⇒ arrive at refined detector concept(s) at the end of 2014
  ⇒ schedule aligned with new geometry software package
- Vertex detector: Slides D.Dannheim
  more realistic material budget, spiral endcaps, single vs. double layers, layer placement in view of occupancy using more realistic digitization
- Other silicon tracking: Slides D.Dannheim
  finer segmentation (short strips, pixels) where appropriate
- ECAL: Slides J.Marshall/A.Sailer (CALICE)
  instrumentation (Silicon pixel and/or Scintillator tiles), number of layers and absorber thicknesses
- Forward region: A.Sailer
  overall optimization for impact on the physics (study QD0 outside detector option; finer calorimeter segmentation to mitigate occupancy)

Activities: hardware R&D

Ongoing activities "with direct link to CLIC study":

- **Forward region calorimetry** => FCAL activities
  - Incl. effort on improved Bhabha scattering simulation
- **CLIC vertex detector R&D (+ inner tracking integration)**
  - Hybrid option activities ongoing: Electronics design, pulsed power, engineering aspects, tests, physics performance Slides D.Dannheim
  - Other technology option ?
- **Main tracker**
  - TPC studies => within LC-TPC collab. + dedicated CLIC CDR occupancy studies
- **ECAL/HCAL**
  - CALICE ECAL (including new ECAL optimisation studies)
  - CALICE HCAL
    - Ongoing analysis of tungsten HCAL beam tests (AHCAL+DHCAL)
- **General engineering studies**
  - Engineering, etc. Working Group
- **Coil R&D**
  - Design studies + reinforced conductor R&D
  - Dedicated meeting within engineering WG

Web pages: CLIC detector & physics

Until now web-posting for the CLIC detector and physics study has been part of the web page for the CERN LCD project

http://lcd.web.cern.ch/lcd/Welcome.html

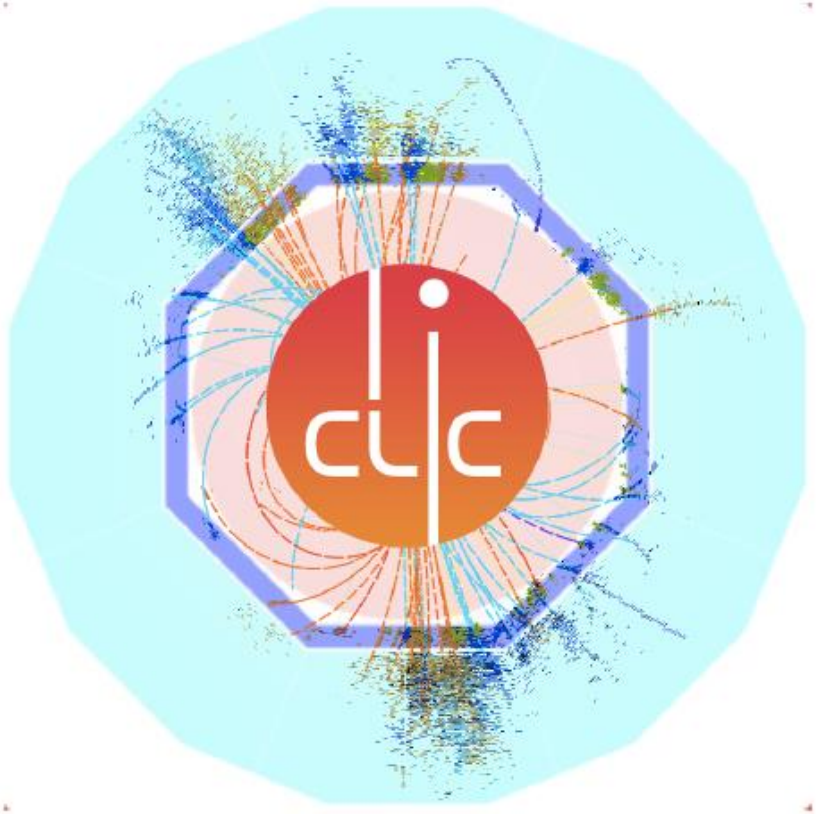
The CLIC detector and physics study needs its own web pages

We are looking for a volunteer !

This task can easily be done from a remote location

Other…..

Any questions ?



CLIC Whitepaper

Proposed whitepaper

- ★ Short (~20-25 page) summary of CLIC results
  - Brief introduction to CLIC
  - Physics sensitivity for staged machine
  - Physics sections follow Snowmass EF topics:
    - Higgs physics
    - Top physics
    - Electroweak/precision physics
    - BSM physics
  - Summary of existing results + theory motivated estimates
  - Emphasis on tabulating results rather than detailed descriptions

http://indico.cern.ch/categoryDisplay.py?categId=4679

Longer Term – an opportunity

- ★ Turn the whitepaper into a synoptic publication (PRD?)
  - Focus on physics reach – not detailed descriptions of analysis

Following IB meeting discussions => "author list" rather than "signatory list"