

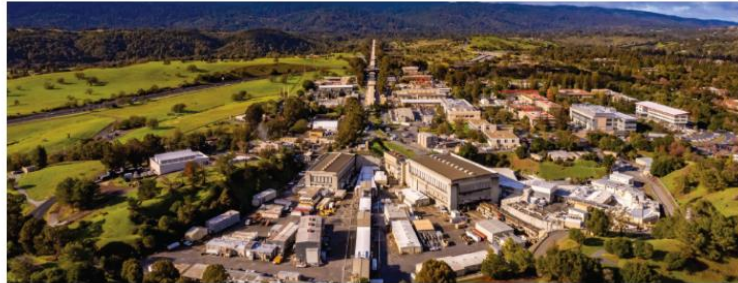


International Workshop on Future Linear Colliders

15-19 May 2023
America's Los Angeles time zone

Overview

- Scientific Programme
- Call for Abstracts
- Timetable
- Q&A Google Docs
- Contribution List
- My Conference
 - My Contributions
- Paper Peer Reviewing
- Book of Abstracts
- Registration
- Participant List
- Program Organizing Committee
- Local Organizing Committee



The 2023 International Workshop on Future Linear Colliders (LCWS2023), continue the series devoted to the study of the physics, detectors, and accelerator issues relating to the high-energy linear electron-positron colliders. A linear collider will operate as a Higgs factory during its initial stage, while maintaining a clear path for future energy upgrades.

Since the last workshop (LCWS2021), many significant steps have been made. With a wide program of plenary and parallel sessions, the workshop will provide the opportunity to present ongoing work as well as to get informed and involved.

Nice to meet again in person

- California has sorted out its weather and increased prices

Good attendance, many new faces, in particular due to Snowmass and C3. HALFV has also given plasma community a boost.

ILC:

- First meeting in person (mostly) of IDT, WG2 and WG3?
- Plenary ITN, ILC and IDT presentations, many topical presentations related to ITN, see next slide
- WG3 activity comments?

Sustainability a key focus of discussion

Carbon estimates for construction becoming much more solid

[Statement](#) provided a good focusing point for discussions – result ~ok (personal opinion), ILC mature and a priority, other technologies encouraged including for possible upgrades, mentioning hosting outside Japan

Life Cycle Assessment

Comparative environmental footprint for future linear colliders CLIC and ILC

LCWS 2023 - SLAC | 16/05/2023

ARUP: *Suzanne Evans, Ben Castle, Yung Loo, Heleni Pantelidou
 CERN: John Osborne, Steinar Stapnes, Benno List, Liam Bromiley
 KEK: Nobuhiro Terunuma, Akira Yamamoto, Tomoyuki Sanuki
 (*presenter: suzanne.evans@arup.com)



https://indico.slac.stanford.edu/event/7467/contributions/5902/attachments/2851/7968/ARUP_CERN_LCA_LCWS_2023.pdf

Tunnel construction (ILC and CLIC DB dimensions) is around 6kton/km
 Add shafts, caverns , access tunnels, DR, etc – vary from 30 to 80%
 Add transports, power used in construction, etc – 25%
 => ILC (20km) around 270 kton, CLIC (11 km) around 125 kton

Possible savings (but at a cost to be defined) of ~40%
 Adding accelerator components (another 50%?)

Operation (in 2040-50)

Nuclear 5g/kWh

Renewables (sun/wind/hydro) 20g/kWh

Can be higher with poor energy mix, can be lower with good contracting (good mix)

Assume 50/50 mix => 1 TWh is 12.5 kton

Energy use estimated for LCs 0.6-0.8 TWh annually

Construction in the 2030'ies the most (time)critical carbon emission to address

Provides us with handles for optimisation

53rd IDT WG2 Meeting

Tuesday 30 May 2023, 13:00 → 14:05 UTC

Description PLEASE NOTE:

We will conduct the meeting by **ZOOM**:

Join Zoom Meeting

<https://desy.zoom.us/j/93931416250>

Meeting ID: 939 3141 6250

One tap mobile

+496950502596,93931416250# Germany

+496971049922,93931416250# Germany

Dial by your location

+1 669 900 9128 (San Jose)

+1 312 626 6799 (Chicago)

+1 646 558 8656 (New York)

+44 330 088 5830 (UK)




+49 30 5679 5800 (Germany)

+41 22 591 00 05 (Geneva)

+33 1 8699 5831 (France)

Meeting ID: 939 3141 6250

Find your local number: <https://desy.zoom.us/u/adMGDaClCe>

13:00	→ 13:10	Report from LCWS	🕒 10m
		Speaker: Shinichiro Michizono (KEK)	
13:10	→ 13:20	Report of Sources sessions at LCWS	🕒 10m
		Speaker: Kaoru Yokoya	
13:20	→ 13:30	Report on SRF sessions at LCWS	🕒 10m
		Speaker: Yasuchika Yamamoto (KEK)	
13:30	→ 13:40	Report on BDS sessions at LCWS	🕒 10m
		Speaker: Toshiyuki Okugli (KEK)	
13:40	→ 13:50	Report on Sustainability sessions at LCWS	🕒 10m
		Speaker: Benno List (DESY)	
13:50	→ 13:55	Report on European ITN Activities	🕒 5m 
		Speaker: Steinar Stapnes (CERN)	
		 ITN-status.pdf  ITN-status.pptx	
13:55	→ 14:00	A.O.B. and next meeting	🕒 5m

Please see much comprehensive summaries of the LCWS from the ILC WG2 point of view:

<https://agenda.linearcollider.org/event/10043/>

The European ITN activities – end May 2023

European ITN studies are distributed on five main activity areas:

A1 with three SC RF related tasks

- SRF: Cavities, Module – CEA/INFN/KEK: materials and single cell cavities
- Crab-cavities – UK/CERN: programme after down-select to be discussed

A2 Sources

- Pulsed magnet to production drawing level - Univ. Hamburg, DESY
- Wheel/target: need to discuss more widely scope and plans (Europe and US)

A3 Damping Ring including kickers

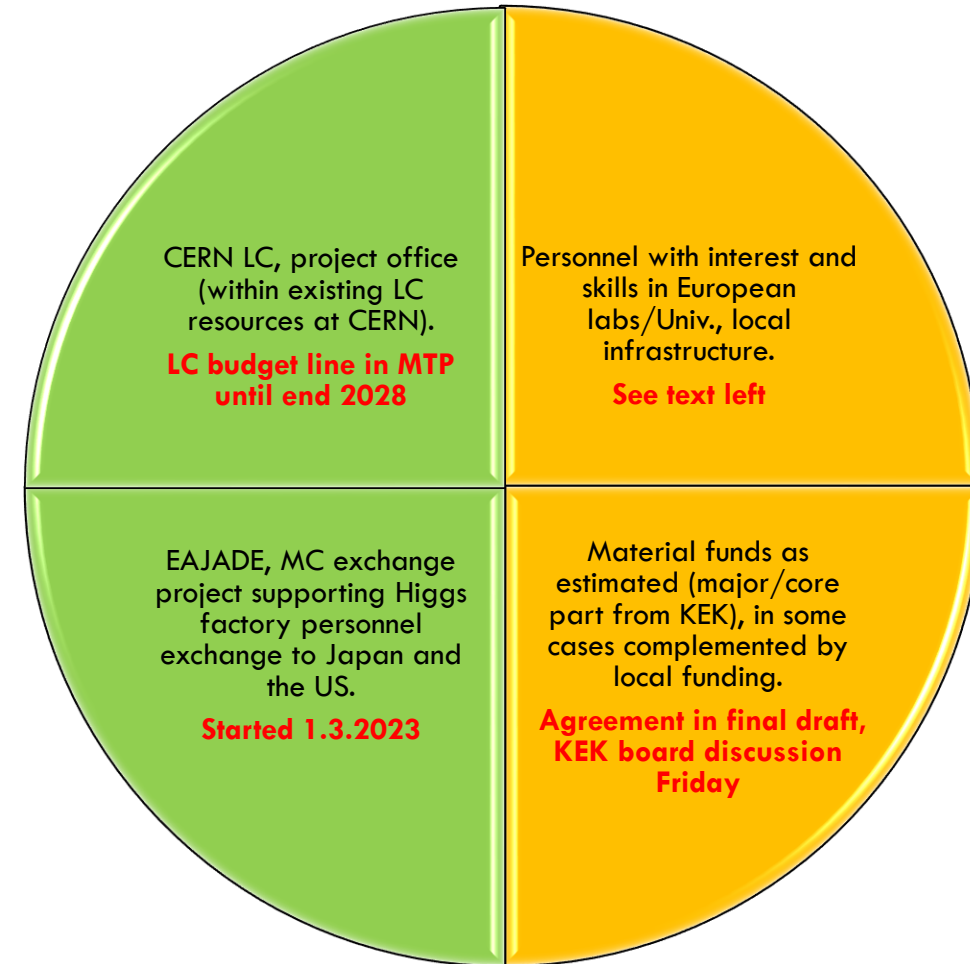
- Low Emittance Ring community – not yet addressed

A4 ATF activities for final focus and nanobeams

- Many European groups very active in ATF – UK, France, Spain, DESY, CERN, Friday operation meetings restarted.

A5 Implementation including Project Office

- Dump, CE, Cryo, Sustainability, MDI, others (many of these are continuations of on-going collaborative activities) – e.g. Spain/KEK: ML quads and cold BPMs (own funding), EAJADE started (EU funding), sustainability studies also (e.g. ARUP report) (CERN LC funding), etc



Successful LCWS 2023, next year in Asia (Japan?)

ITN moving, also in Europe, need to continue and come back to searching external resources in Europe. Many practical hurdles ahead .. contracts, orders

Carbon studies maturing (LC studies leading this effort)

US efforts under discussion (P5 on-going)

Need to build stronger case for ILC serving a wide community
(LCs/diversity programme/R&D on acc.&detectors)