

# The FCC Week 2026 - A Review

Uli Einhaus and the ILD attendees  
ILD Analysis/Software Meeting  
17.06.2026

Disclaimer: these are selected highlights, not a comprehensive summary of the [workshop](#)

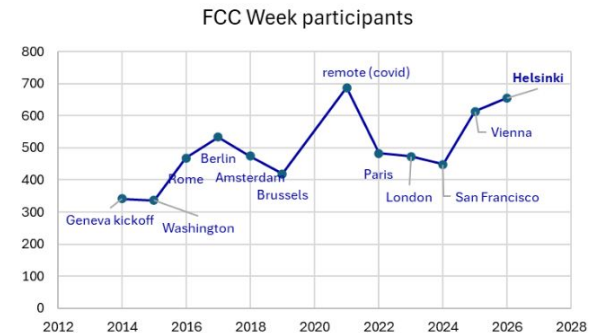
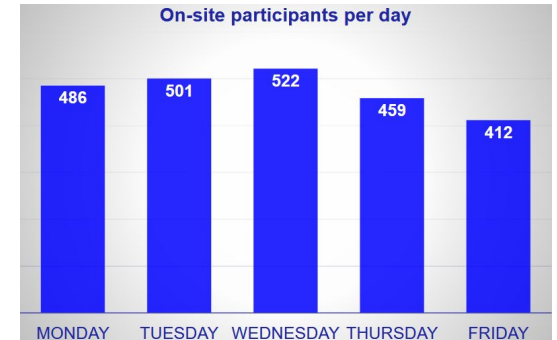
# Schedule & Attendance

One full week at Uni Helsinki, with host contributions from all Baltic sea countries

650 registrants, ~ 500 on site, 3:1 machine to PED + combined (orange) sessions

[F. Zimmermann](#)

Monday 9 June	Tuesday 10 June						Wednesday 11 June					Thursday 12 June					Friday 13 June																									
Plenary	Parallel 1	Parallel 2	Parallel 3	Parallel 4	Parallel 5	Parallel 6	Plenary	Parallel 1	Parallel 2	Parallel 3	Parallel 4	Parallel 5	Parallel 1	Parallel 2	Parallel 3	Parallel 4	Parallel 5	Plenary																								
Auditorium (F2044)	Pieni juhlasali (F4050)	Tella Hallin (F3003)	F3017	F3005	F3020	U3039	Auditorium (F2044)	Pieni juhlasali (F4050)	Tella Hallin (F3003)	F3017	F3005	F3020	Tella Hallin (F3003)	F3017	F3005	F3020	Auditorium (F2044)																									
First Morning session	Physics Studies 1	Optics Design and Parameters	Magnet support & alignment	Electricity & Energy Management	FCC Baseline (SRF)	IRIS Project organization	Environment	Physics Software and Computing	Collective Effects	Magnets	RF Points and Cryogenics	Industry Day	Physics Studies 3	FCC-hh & High-field magnets	Machine protection & Availability	Safety	Injector	Summaries																								
Coffee break	Coffee Break						Coffee Break						Coffee break																													
Second morning session	Detector 1	International Collaboration Board	Vacuum	Geodesy, Transport & Robotics	RF Hardware Development and System Integration for FCC	IRIS WP and alignment 1	Physics studies 2	Detectors 2	Injector overview	Powering	Cooling & Ventilation	Industry Day	Detectors 3	FCC-hh & High-field magnets	Beam Intercepting devices	Booster overview	RF System Performance and Beam Stability	Summaries																								
Lunch break	Lunch break						Lunch break						Lunch break																													
Overview by FCC Coordinators	Scheduling, Planning and Resources	Optics Corrections and Tuning	Territorial Dialogue	Integration	MDI 1	IRIS WP and alignment 2	Joint session Physics & Software and Computing	Operation and Performance	Industry Day			Joint session Physics & Software and Computing & Detectors	MDI 2	Injection & extraction systems	Scientific Advisory Committee	SRF Technology Developments																										
Coffee break	Coffee Break						Coffee Break						Coffee break																													
Plenary session for Physics Experiments and Detectors	Systems Engineering and Project-wide Integration						Synergies with other projects						Civil Engineering and MATER						Education, Communications, Outreach, Innovation						EPOL 1						IRIS Executive Board						Nordic Baltic Perspectives on Big Science and Innovation					
Welcome reception	Early Career Professionals						Poster session						EPOL 2						Innovation and Technology						Injector Machine Specific Designs and R&D Progress																	
Conference dinner																																										
Closing remarks																																										



# Strategy Matters

Mood has gone from victory to work,  
from feasibility study to reference  
design report

In Munich introduction of 'descoped  
FCC', now part of physics projections,  
mostly arguing for full FCC

Notable: welcome address by Valdis  
Dombrovskis, physicist by training,  
Latvian EU commissioner for  
Economy and Productivity

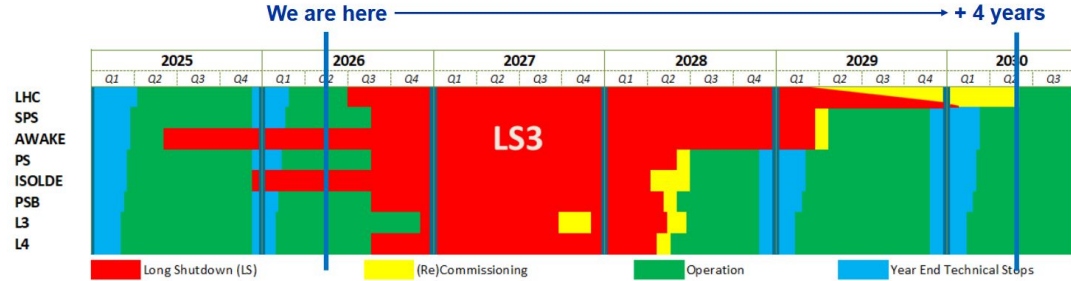




# Strategy Matters

## Mark Thomson:

- HL-LHC “by far” priority 1, FCC priority 2
- 2028 depends on success of HL
- scientific assessment of collider options is finished, clear answer in ESPPU
- no R&D funding for LC or LEP3 in option analysis, only documentation
- [in 2028] “seeking a go-no go decision, this is not a choice between options”



### Maintaining this schedule is the highest priority for CERN

- essential to maintain the momentum for CERN's current flagship collider
- and essential for the transition to the next long-term project

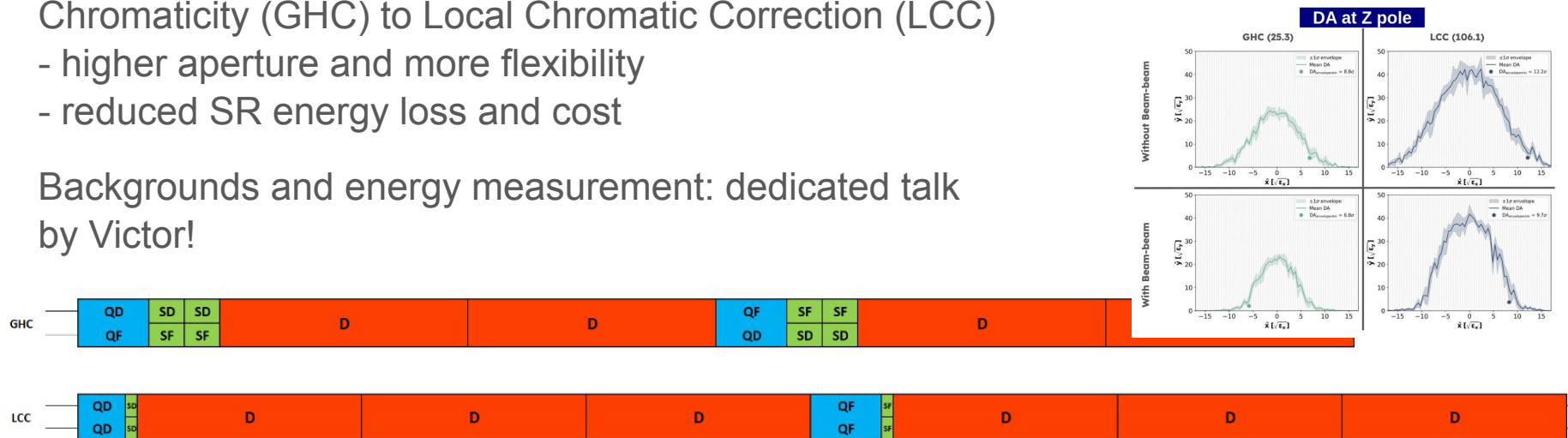
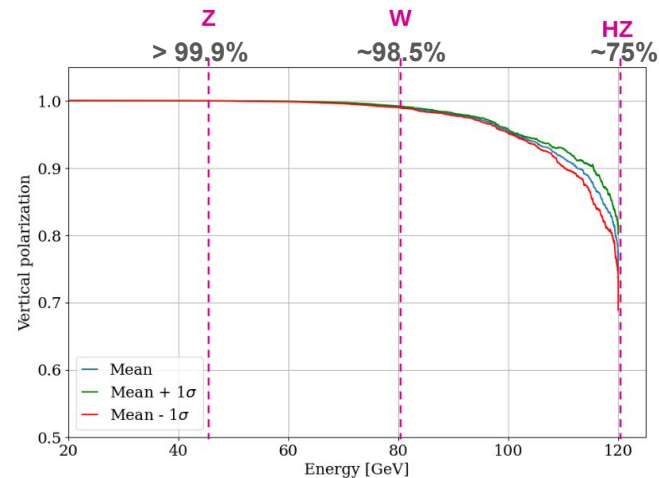
# Accelerator News

[J. Wenninger](#): first simulation studies show that polarisation can be maintained through energy ramp up to Z and WW, possibly ZH

[J.P. Burnet](#): lattice change from Global Hybrid Chromaticity (GHC) to Local Chromatic Correction (LCC)

- higher aperture and more flexibility
- reduced SR energy loss and cost

Backgrounds and energy measurement: dedicated talk by Victor!

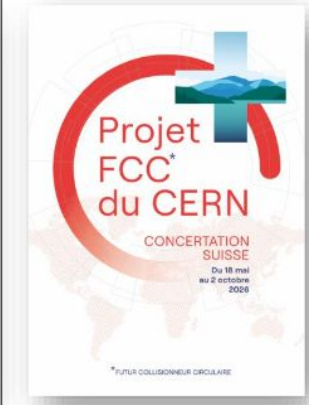


# Civil Engineering

Arc tunnel and booster updates, 30 m arc cell mock-up close to completion to be used for development and testing of tunnel equipment

Usage of excavated material, mostly molasse, plans for identification and on-site processing for usage or disposal

Public participation: four months of dialogue with citizens in France and Switzerland from May to Oct 2026



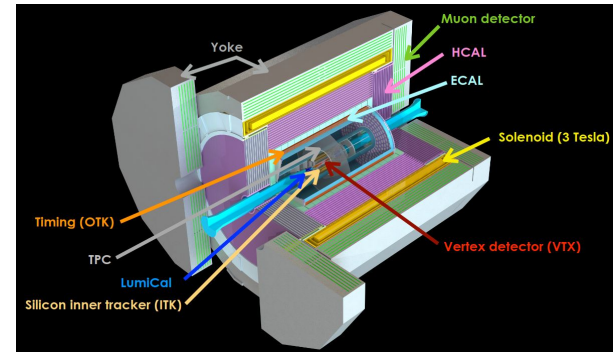
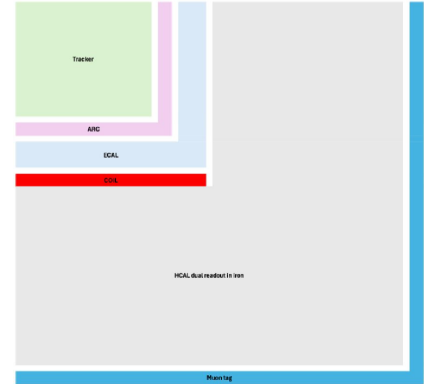
# Detector Concepts

New detectors:

- [ALFA](#): Advanced, Lightweight and Fine-grained Apparatus  
all-MAPS tracker, ARC, GRAiNITA ECal, Coil, DR HCal
- [AGORA](#): Advanced Glass Optimized Research Apparatus  
adaption of the CEPC Reference Detector, intention to join FCC project  
MAPS Vtx, TPC, LGAD TOF, crystal bars ECal, Glass scintillator HCal, Coil

Concepts overall still very open and in flux

[Taikan's talk](#) about ILD was well received  
(as were all detector talks)



# Detector Software Developments



Distributed [computing](#) grid, in particular for [MC production](#), is growing

IDEA and ALLEGRO nearly ready with full sim & reco chain, detailed [digitisers](#) with signal+noise+backgr. combination on sensor level (waveform, SiPM, etc.)

ILD simulation is lacking detail and adaption to CC conditions, in particular TPC digitiser, reco needs update with newest ML

[S. Ko](#): Reco Summary

Please participate in FCC [Full Sim](#) & [Reco Meetings](#) and present ILD!

Email lists: [Full Sim](#), [Reco](#), [HLR](#), [ILD](#)

	CLD	ILD	IDEA	ALLEGRO
PandoraPFA	✓ <a href="#">[link]</a>	✓ <a href="#">[link]</a>	Ongoing <a href="#">[link]</a>	Ongoing <a href="#">[link]</a>
ML PF	✓ HitPF <a href="#">[link]</a> MaskFormer <a href="#">[link]</a>	Ongoing <a href="#">[link]</a>	Planned	Started (Giovanni & Rami)
PID	Ongoing (ARC) <a href="#">[link]</a>	✓ TPC + ToF <a href="#">[link]</a>	Ongoing (dN/dx) <a href="#">[link]</a>	
Jet flavor tagging	✓ <a href="#">[link]</a>	(performed in the context of ILC <a href="#">[link]</a> )	Planned	Planned
$\pi^0$ ID		(from 2015 <a href="#">[link]</a> )		Ongoing <a href="#">[BDT]</a> <a href="#">[Transformer]</a>
Tau	Ongoing <a href="#">[link]</a>	(from 2015 <a href="#">[link]</a> )	Planned (previous "standalone" study with option 1 <a href="#">[link]</a> )	Planned

1) full-simulation only

2) consider studies conducted with tools available in the central framework (or plan to be integrated)

3) ALFA to be appeared once the geometry is ready

# Physics Developments

[PED summary](#)  
by B. Francois

[Much work](#) on SM precision, but also a [session](#) on [BSM](#)

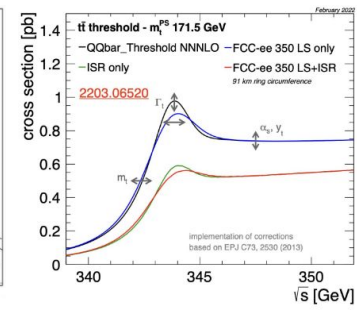
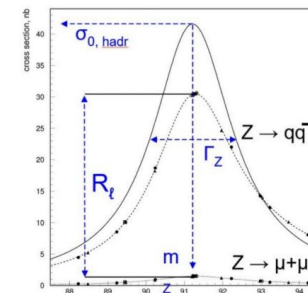
Emphasising importance of full sim (which is mostly still to-do)

Call for improved theory predictions

Resurrecting [LEP data](#) for FCC analysis tests, now possible to generate new ALEPH MC samples

Several implications of ‘descoped FCC-ee’ addressed, e.g. precision top for  $m_W$ , Z-pole flavour physics statistically limited

Reviving benchmark analyses with [FCC-Analysis](#) stream - good occasion to start our contributions, consider integration of ILD to the framework

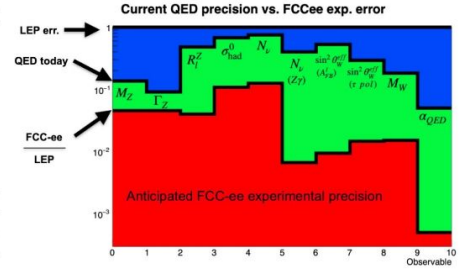
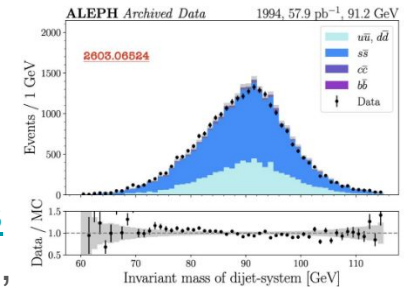


- HNLs are the most advanced of the direct searches, but more work is still welcomed in e.g. additional channels and less simplified modes

**- Full-sim studies needed!!**

- ALPs and Exotic Higgs follow suit, and more mature studies are needed as well as additional channels

**- Full-sim studies needed**

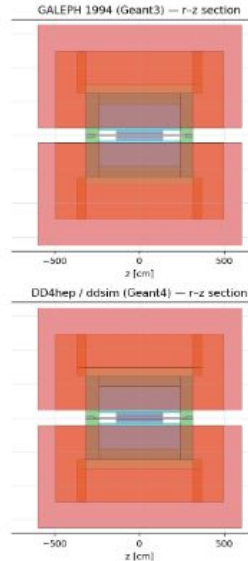


# A.I.

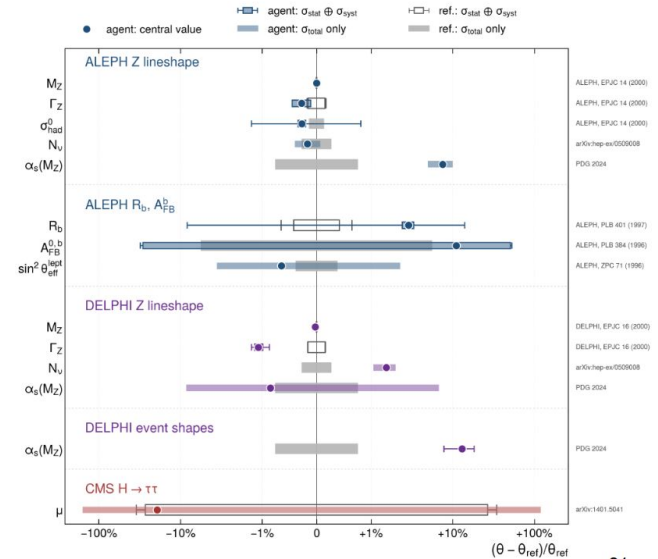
2 talks about AI

- [V. Kain](#) on AI designing and/or running an accelerator
- [D. Garcia](#) on AI usage for (detector) simulation and physics, examples:
  - fully agentic analyses
  - major software creation

**geant4 ddsim  
model for  
ALEPH**



## Z lineshape analysis



# A.I.

Agentic AI workflows are here.

Leaps are enormous, talks highlight “story of the last months”.

Right now, agentic AI can replace bachelor students, maybe master students.

We need to figure out how to handle this and how to adapt our workflows.

[W. Handley](#) @EuCAIFCon 2025:

If you are not using the latest large language models (o3, claude 4.0, gemini 2.5) and agentic systems (claude code, cursor, roocode, codex, deep research) **you are months behind**

What we should do now

[D. Garcia](#):

- ❑ Prepare the codebase
  - Document conventions explicitly
  - Treat key4hep / FCCSW documentation as a first-class deliverable → they become training data
- ❑ Prepare the people
  - Rethink student training, code reviews, evaluation
  - Build infrastructure to verify outputs, physics validation, sanity checks
- ❑ Prepare the policies
  - Community guidelines for central frameworks
  - Shared benchmarks to measure progress
  - Interest the CS community in physics problems

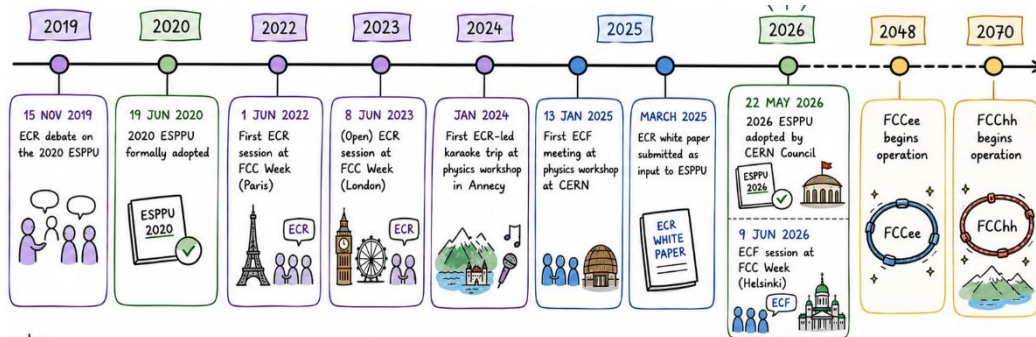
# Early Career

New term: ECP (Early Career Professionals) to include also engineers and technicians

[ECP session](#) well attended, recent events and highlights of the past, concrete plans for the future, mentimeter for the desired direction

Notable: All summary talks were given by ECPs!

## [S. Williams:](#)



## [J. Keintzel:](#) 3 pilots being discussed with FCC management

- Pilot 1: FCC ECP Representation in Governance
- Pilot 2: FCC Regular Updates
- Pilot 3: FCC Training and Induction Programme

# Next FCC Week

[Announcement](#) of next FCC Week:  
Madrid 12-16 April 2027

Intended to be combined with FCC  
Physics Week 2027, so a rather  
large workshop



# Finland & Helsinki



Summer edition

## Hacks by the happiest country in the world

Saturday sauna. Skipping small talk. Socks and sandals. Coffee break at the market square. Outdoing the Swedes. Listening to the silence at the summer cottage. Blueberry picking in the forest. Four weeks of summer holiday. Skinny-dipping under the midnight sun.



## People & Places



## Guns & Geese



## Carrots & Kantele

