

1. Développer un argumentaire grand-public sur le cas de physique du FCC (*CERN, communautés scientifiques utilisatrices*).

2. Comparer les mérites scientifiques du FCC avec ceux des projets concurrents (*CERN, communautés scientifiques utilisatrices*).

Comparer de façon plus systématique (mais concise et simplement exprimée) le programme de physique du FCC avec ceux des projets concurrents (et en particulier du projet chinois CEPC).

3. Quantifier les besoins en calcul théorique (*CERN, communautés scientifiques utilisatrices*).

4. Poursuivre la définition des concepts de détecteur pour FCC-ee (*CERN, communautés scientifiques utilisatrices*). (en particulier un détecteur spécialisé sur la physique du b).

Prise en compte de questions scientifiques et techniques, notamment d'évolutions des sciences et de la physique qui pourraient survenir dans le temps long d'ici au fonctionnement du FCC, mais aussi d'autres domaines, comme l'intelligence artificielle, en développement particulièrement rapide, qui pourrait apporter de nouvelles visions sur le sujet.

# FCC-DRD-Jamboree / July 2<sup>nd</sup> 2024

**09:00** → 09:20 **Introduction/News**

**09:20** → 09:40 **ZH cross section and Higgs Mass measurements In ZH events at 240 and 365 GeV @ APC**

**Orateurs:** Gregorio Bernardi (APC Paris CNRS/IN2P3), Kevin Dewyspelaere (APC Paris CNRS/IN2P3)

**09:40** → 10:00 **Higgs couplings measurements at 240 GeV @APC**

**Orateurs:** Alexis Maloizel (APC, Paris), Giovanni Marchiori (APC Paris)

**10:00** → 10:20 **QCD & Lund Jet plane studies at FCC-ee**

**Orateur:** Lata Panwar (LPNHE)

**10:20** → 10:40 **ALLEGRO ECAL cross-talk emulation**

**Orateur:** Zhibo Wu

**10:40** → 11:00 **ALLEGRO simulated performance**

**Orateur:** Tong LI (APC Paris, CNRS/IN2P3)

**16:00** → 16:20 **H(ZZ\*) measurements In 4l channels at FCCee**

**Orateurs:** Hind Taibi, Marco Delmastro (LAPP)

**16:20** → 16:40 **Constraining BSM theories with oblique parameters, FCC Improvements**

**Orateurs:** Aldo Deandrea (IP2I - Université Lyon 1), Christian Verollet, Giacomo Cacciapaglia (IP2I Lyon)

**16:40** → 17:00 **APRIL : a particle flow algorithm for future colliders**

**Orateurs:** Gérald Grenier (IPN Lyon/Université Lyon 1), Tanguy PASQUIER (IP2I, Univ Lyon 1)

**17:00** → 17:20 **Development of the full simulation of the tracker concepts for the Future Circular Collider project**

**Orateurs:** David Buitrago, Gaëlle Boudoul (cnrs)

# *New (2024 – 2026)*

## *Update of the European Strategy for Particle Physics*



Launched by CERN Council on proposal by  
CERN management in March 2024

### **Key Dates** (as far as already known):

- 31. March 2025: Deadline for submission of input by the community
- End of June 2025: Open Symposium
- ...
- June 2026: Council decision on Update of the Strategy

# ESPP

**Strategy Secretariat:** organising and running the ESPP process

Strategy Secretary (Chair, → Karl Jakobs elected)

Paris Sphicas (ECFA Chair)

Hugh Montgomery (SPC Chair)

Dave Newbold (LDG Chair)

**Physics Preparatory Group (PPG):** collects input from the community, organises the Open Symposium, prepares the Briefing Book

- Strategy Secretariat (Strategy Secretary is Chair of PPG)
- 4 members appointed by Council, on recommendation of SPC
- 4 members appointed by Council, on recommendation of ECFA → Nominations just finished, decision in August
- 1 representative appointed by CERN
- 2 representatives from the Americas and 2 from Asia

**European Strategy Group (ESG)** Prepares the Strategy Document

- Strategy Secretariat (Strategy Secretary is Chair of PPG)
- 1 representative from each CERN Member State
- 1 representative appointed by each LDG laboratory
- CERN Director General
- Invitees: PPG, President of Council, 1 representative from each Associate Member and Observer State, 1 representative from the EC, Chairs of APPEC, NuPECC and ESFRI

# Meetings Nationaux de Stratégie

**En Italie, Meeting de Stratégie s'est tenu en Mai:**

Support à FCC, muon collider R&D de long terme

Pas de mention de Plan B, mais éventuellement flexibilité

**En France, Meeting de Stratégie en Janvier (20-21)**

Comment nous préparons-nous ?

- FCC Week in San Francisco (June)
- HET Factory ECFA-workshop in Paris (October)
- FCC France-Italie in Venezia (November)

# Feasibility Study Mid-Term Review passed !

The goal of the FCC FS mid-term review is to assess the progress of the Study towards the final report.

Deliverables approved by the Council in September 2022:

[https://indico.cern.ch/event/1197445/contributions/5034859/attachments/2510649/4315140/spc-e-1183-Rev2-c-e-3654-Rev2\\_FCC\\_Mid\\_Term\\_Review.pdf](https://indico.cern.ch/event/1197445/contributions/5034859/attachments/2510649/4315140/spc-e-1183-Rev2-c-e-3654-Rev2_FCC_Mid_Term_Review.pdf)

## Deliverables:

- D1 : Definition of the baseline scenario
- D2 : Civil engineering
- D3 : Processes and implementation studies with the Host States
- D4 : Technical infrastructure
- D5 : FCC-ee accelerator
- D6: FCC-hh accelerator
- D7: Project cost and financial feasibility
- D8: Physics, experiments and detectors

## Future Circular Collider Midterm Report

February 2024

Edited by:

B. Auchmann, W. Bartsch, M. Benedikt, J.P. Burnet, P. Craievich,  
M. Giovannozzi, C. Griess, J. Gutleber, K. Hanke, P. Janot, M. Mangano,  
J. Osborne, J. Poole, T. Raubenheimer, T. Wilson, F. Zimmermann



This project has received funding under the European Union's  
Horizon 2020 research and innovation programme under grant  
agreement No 961754.

This document has been produced by the organisations participating in the  
FCC feasibility study. The studies and technical concepts generated here  
do not represent an agreement or commitment of any of CERN's Member  
States or of the European Union for the construction and operation of an  
extension to CERN's existing research infrastructures.  
The midterm report of the FCC Feasibility Study reflects work in progress  
and should therefore not be propagated to people who do not have direct  
access to this document.

## Full Report

- 8 Chapters/Deliverables
- ~ 700pp document
- ~ 16 editors
- ~ 500 contributors

Many thanks to the SAC,  
CRP, SPC, FC and the  
Council for the very useful  
reviews!

## Documents:

- Mid-term report (all deliverables except D7)
- Executive Summary of mid-term report
- Updated cost assessment (D7)
- Funding model (D7)

## Review process:

- Oct 2023: Scientific Advisory Committee (scientific and technical aspects)  
and Cost Review Panel (ad hoc committee; cost and financial aspects)
- Nov 2023: SPC and FC
- 2 Feb 2024: Council

All deliverables met, no technical showstoppers

→70-80 recommendations



## Main goals for 2024/beginning 2025

- **Completion of technical work for Feasibility Study until end 2024**
  - Implementation of recommendations of the mid-term review
  - Focus on “feasibility items” and items with important impact on cost/performance
  - Develop a risk register
  - Update cost estimate to reach cat 3 level on cost uncertainty (-20% / +30%).
  - Further develop the funding model based on discussions with CERN Council
- **Complete FS by March 2025 as input for ESPP update.**
- **In parallel, continue work with host states on project definition and responsibilities, authorization procedures, excavation material strategy and regional implementation development.**

## Structure: 3 Volumes

- **Vol. 1:** *Physics, Experiments and Detectors (~200 pages)*
- **Vol. 2:** *Accelerators, Technical Infrastructures, Safety Concepts (~370 pages)*
- **Vol. 3:** *Civil Engineering, Implementation & Sustainability (~200 pages)*

## Input for Update of European Strategy for Particle Physics

to be prepared with Overleaf & published by EPJ (Springer-Nature) – FCCIS members



*In addition documentation on Cost Estimate – Funding Models*



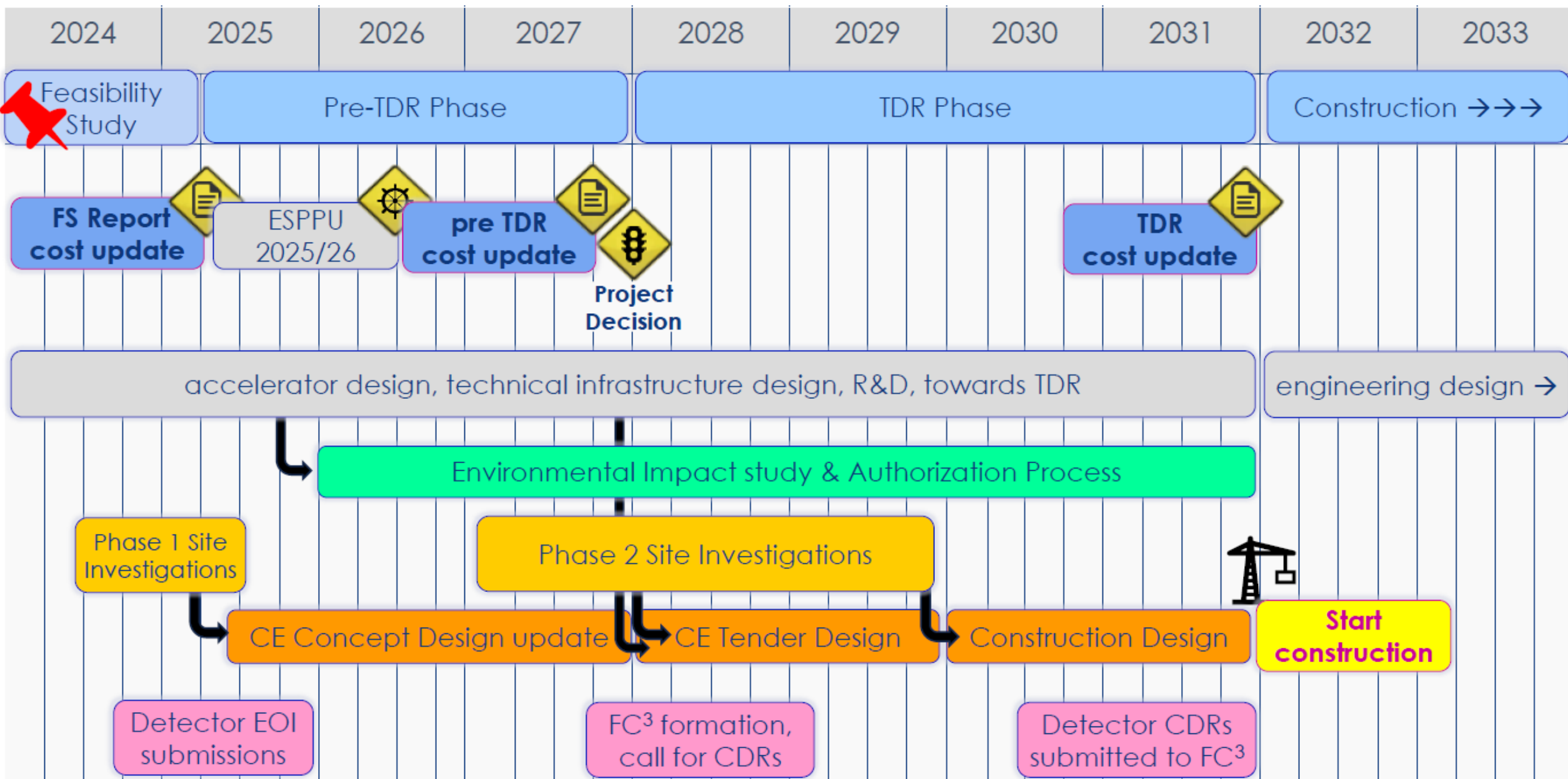


## Pre-TDR phase from April 2025 until end 2027

Main goal is to provide all information to Council to allow taking a decision on the project **by end of 2027 or early 2028**

- Further develop the civil engineering and the technical design of all major systems and components, so as to provide a **more detailed cost estimate** with reduced uncertainties
  - Continuation of **technical R&D activities**
  - Work with host states on **regional implementation development and authorization process definition to enable launch of environmental impact study in 2026**
  - Continuation of site investigations and perform an **overall integration study to specify requirements of technical infrastructure, accelerators and detectors**
    - **Provision of input for civil engineering design if the project goes ahead.**
- Work with international partners to define roles and work packages

# Expected time line till start of construction



# Status of the FCC Global Collaboration

**Increasing international collaboration as a prerequisite for success:**

→ links with science, research & development and **high-tech industry** will be essential to further advance and prepare the implementation of FCC

## **FCC Feasibility Study:**

Aim is to increase further the collaboration, on all aspects, in particular on Accelerator and Particle/Experiments/Detectors

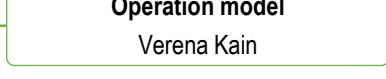
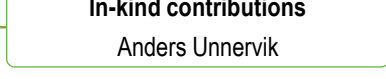
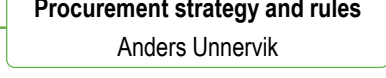
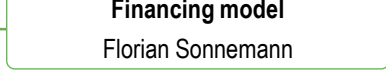
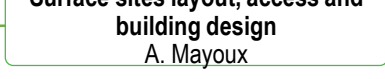
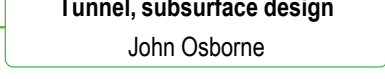
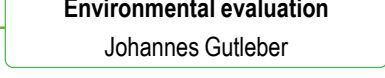
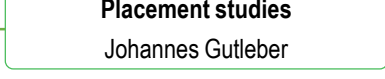
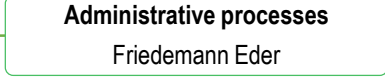
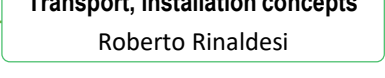
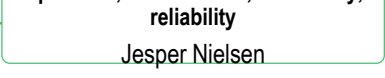
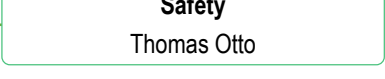
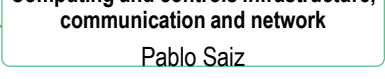
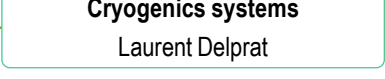
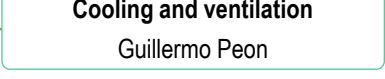
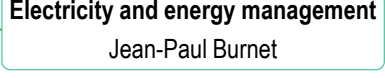
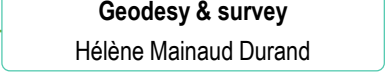
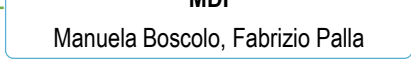
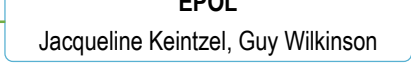
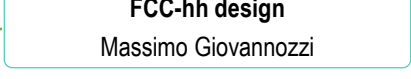
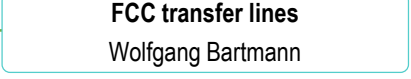
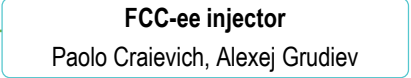
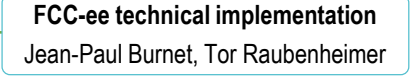
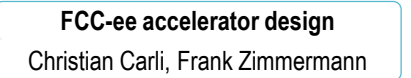
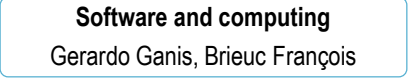
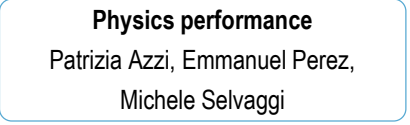
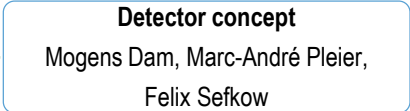
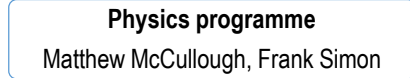
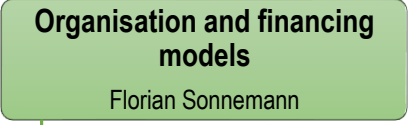
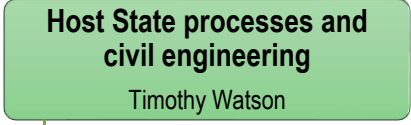
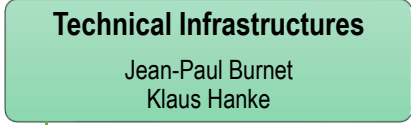
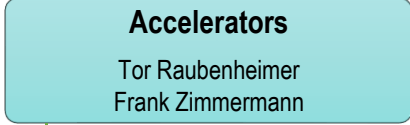
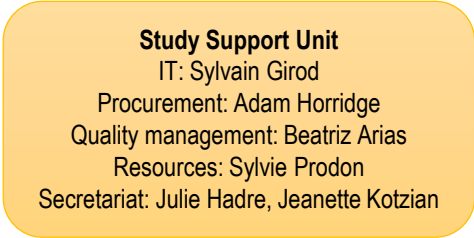
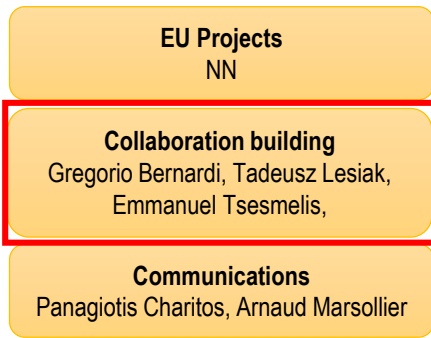
141  
Institutes

32  
countries  
+  
CERN



 **FUTURE  
CIRCULAR  
COLLIDER**  
Feasibility Study

# FCC Feasibility Study



**Collaboration building:**  
Through the FCC Global Collaboration (FGC) and the International Forum for National Contacts (IFNC)

# Next 5 years / HEP Collaborations building

- **EOI for subdetectors and proto-detector concepts to be submitted by March 2025**
- **National/Regional EOI in support of FCC for subdetectors to be submitted by March 2025 ?**
- **Set-up process for proto-collaborations formation in 2028-2029**

The Cost Review Panel recommends to work with the scientific community, institutes, laboratories and funding agencies to ensure support and resources for **four experiments**, facilitating the exploitation of the full scientific potential offered by the large investment in the FCC-ee facility

- Completing list of tasks of the Institutes in the IFNC
- Iterate with National Contacts to gather latest information of possible funding of the HEP teams.
- Explore how the countries/institutes positions themselves on the current/future proto-detector concepts

## **A possible strategy for building HEP collaborations in the next five years:**

- Start with EOI for subdetectors and proto-detector concepts in 2025, and their development in the following two years.
- Assuming positive recommendation to push forward by end of 2027 by the CERN council:
  - Setting up FCCC and proto-collaborations (following call for CDR); probably around proposed proto-detector concepts,
  - Learn from observing the current setting up of the DRD collaborations.
  - Find a scheme to reduce the number of proto-collaborations (merging) if more than 4 proposals
  - **Process could converge by 2030-2031**



# Unifying the HEP community to support FCC

- In these last three years, the IFNC has grown to include national contacts from all European countries, and has reached out to all large countries outside Europe, with dedicated information/collaboration meetings
- With Japan, there have been discussions but no contact has been confirmed yet given the ILC revived initiative.
- With China since there is direct competition, only general discussions have taken place, showing however that Chinese physicists would like to collaborate if FCC would move forward and not CEPC.
- To reach further consensus, inside each country, contacts for institutes eager to collaborate in FCC have been identified (>45 in the US, 15-20 in each of UK, Italy and France, 10 in Germany but growing and so on),
  - detailed picture of the FCC support is now identified, and is now showing a clear majority supporting FCC-ee.
- The minority is divided into
  - 1) those supporting a muon collider: many physicists of this community accept now that the muon collider is a second generation machine, hence feel less in competition with the FCC project.
  - 2) those supporting a linear option (mostly ILC-like) based on arguments which are sometimes contradictory (e.g. duration and cost when considering the necessary upgrades)
  - 3) those who would like to go directly to a FCC-hh, especially if CEPC would be built, even at lower energy than in the nominal hh project, however penalizing is such a plan in terms of cost and starting time delay.
- The FCC-ee IFNC has identified these physicists and participates in workshops in which scientific arguments are exchanged with them, and some physicists of the minority get convinced and eventually support FCC, but this is a slow process.
- The on-going strategy process in many European countries is also playing a positive role to further unite the community.

# ECFA Panels: HET Factory Study (I)

**Web page:** <https://ecfa.web.cern.ch/ecfa-study-higgs-ew-top-factories>

## □ Charge:

□ Based on the recommendations of the [ESPP Update], ECFA is organising a series of workshops on physics studies, experiment design and detector technologies towards a future electron-positron Higgs/EW/Top factory.

□ *The aim is to bring together the efforts of various e+e- projects, to share challenges and expertise, to explore synergies and to respond coherently to this high-priority strategy item.*

□ Current goal: update contribution sent to Snowmass exercise; write up in an ECFA White Paper (or CERN Yellow Report) for Dec 2025.

□ Editors: A. Robson and C. Leonidopoulos

## □ HET Factory Workshops:

• First: 2022 @ DESY (GE);

• Second: 2023 @ Paestum (IT);

• Third : 2024 @ Paris, October 9-11

## □ Task for RECFA:

□ Impact on HET Factory study (its conclusion) and schedule of next EUSPP:

Since ECFA study has to feed/inform ESPP process, it should be ready in early Spring 2025.

# ECFA Panels: HET Factory Study (III)

## □ HET Factory study; focus topics in [ArXiv report](#).

|    |   |
|----|---|
| 1  | <b>HtoSS</b> — $e^+e^- \rightarrow Zh: h \rightarrow s\bar{s}$ ( $\sqrt{s} = 240/250$ GeV) . . . . .  |
| 2  | <b>ZHang</b> — $Zh$ angular distributions and CP studies . . . . .  |
| 3  | <b>Hself</b> — Determination of the Higgs self-coupling . . . . .   |
| 4  | <b>Wmass</b> — Mass and width of the $W$ boson from the pair-production threshold cross section lineshape and from decay kinematics . . . . . |
| 5  | <b>WWdiff</b> — Full studies of $WW$ and $e\nu W$ . . . . .   |
| 6  | <b>TTthres</b> — Top threshold: Detector-level simulation studies of $e^+e^- \rightarrow t\bar{t}$ and threshold scan optimisation . . . . .  |
| 7  | <b>LUMI</b> — Precision luminosity measurement . . . . .  |
| 8  | <b>EXscalar</b> — New exotic scalars . . . . .  |
| 9  | <b>LLPs</b> — Long-lived particles . . . . .  |
| 10 | <b>EXtt</b> — Exotic top decays . . . . .   |
| 11 | <b>CKMWW</b> — CKM matrix elements from $W$ decays . . . . .  |
| 12 | <b>BKtautau</b> — $B^0 \rightarrow K^{0*}\tau^+\tau^-$ . . . . .  |
| 13 | <b>TwoF</b> — EW precision: 2-fermion final states ( $\sqrt{s} = M_Z$ and beyond) . . . . .   |
| 14 | <b>BCfrag</b> and <b>Gsplit</b> — Heavy quark fragmentation and hadronisation, gluon splitting and quark-gluon separation . . . . .           |

# 3<sup>rd</sup> ECFA workshop on $e^+e^-$ Higgs, Top & ElectroWeak Factories

9–11 October 2024

Sorbonne Université, Campus des Cordeliers, Paris



## International Advisory Committee

- Patricia Coude Wuels (IST/LIP)
- Oliver Conradi (MZFPS)
- Mogens Dam (Copenhagen NBI)
- Arnoud Ferrari (Stockholm)
- Ivan Fischer (Valencia)
- Eliott Gross (Tel Aviv)
- Jürgen D'Hondt (VUB Brussels)
- Christophe Goussard (DESY)
- Patrick Janot (CERN)
- Max Klein (Liverpool)
- Christos Leonidopoulos (Edinburgh)
- Celso Norries Rivera (Wahlvi)
- Joachim Mauch (CERN)
- Alessandro Notti (ROME 2)
- Andrii Ribiakov (Skopje)
- Frank Simon (KIT)
- Paris Sphicas (Athens, CERN, Chuo)
- Shantur Stoyanov (CERN)
- Roberto Tenchini (Pisa)
- Guy Wilkinson (Oxford)
- Andrea Walzler (Lausanne)

## Local Organizing Committee

- Gregorio Benardi (CNRS/IN2P3, Chair)
- Catherine Bouchat (L2IT Toulouse)
- Gaëlle Boudoul (IP2I Lyon, ACP)
- Vincent Boudry (ILR Palaiseau)
- Paul Calas (ORF, CEA/Saclay)
- Marco Delgado (IAPP Arnsch)
- Jean Baptiste De Waele (IPSC Grenoble)
- Zaid El Bini (PHC Strasbourg)
- Giovanni Marchion (APC Paris, co-Chair)
- Stéphane Mariani (IPC Clermont-Ferrand)
- Nicolas Morange (JCLab Druy, co-Chair)
- Luc Poggiani (LPMHE Paris)
- Suzanne Gascon-Shapiro (IP2I Lyon)
- Maxime Thion (ORF, CEA/Saclay)

+ ECR workshop on 8/11  
(afternoon)

+ Public event on 8/11  
(evening)

# Extracts of the agenda (1<sup>st</sup> and 3<sup>rd</sup> day)

## Wednesday 9/10

|       |   |   |
|-------|---|---|
| 08:00 | <b>Registration</b>   |   |
|       | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>  |   |
|       | 08:00 - 09:00   |   |
| 09:00 | <b>News from the local organizers</b>   |   |
|       | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>  |   |
|       | 09:00 - 09:10   |   |
|       | <b>Welcome from IN2P3 and IRFU</b>  |   |
|       | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>  |   |
|       | 09:10 - 09:25   |   |
|       | <b>ESPPU process and timeline; goals of the workshop</b>  |   |
|       | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>  |   |
|       | 09:30 - 09:40   |   |
|       | <b>The need for a Higgs, Electroweak, and Top factory</b>   |   |
|       | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>  |   |
|       | 09:45 - 10:10   |   |
| 10:00 | <b>Software for future colliders</b>  |   |
|       | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>  |   |
|       | 10:15 - 10:30   |   |
|       | <b>coffee break</b>   |   |
|       | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>  |   |
|       | 10:30 - 11:00   |   |
| 11:00 | <b>Parallel - WG2</b><br><i>Dirk ZERWAS, Fulvio Piccinini, Patrizia Azzi</i>  | <b>Parallel - WG3</b><br><i>Felix Sefkow, Giovanni Marchiori, Dr Mary-Cruz Fouz</i> |
|       | <b>Parallel - WG1-PREC</b><br><i>Adrian Irlas, Fabio Maltoni Maltoni, JORGE DE BLAS, Jenny List, Patrick Koppenburg</i> |   |
| 12:00 |   |   |

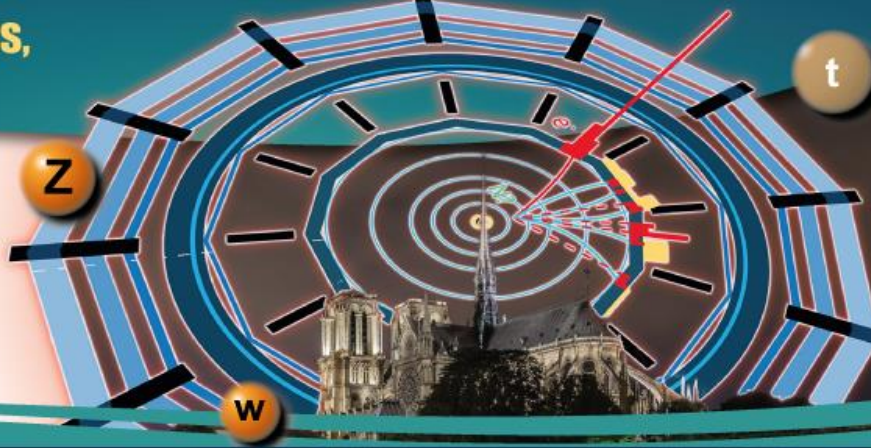
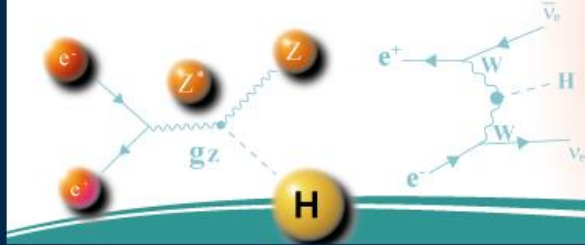
## Friday 11/10

|       |  |  |               |
|-------|--|--|---------------|
| 09:00 | <b>Generators and Theory developments needed for HET physics</b>                 | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> | 09:00 - 09:25 |
|       | <b>Towards detectors for HET factories / tracking and vertexing systems</b>      | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> | 09:30 - 09:50 |
| 10:00 | <b>Towards detectors for HET factories / calorimeter and PID systems</b>         | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> | 09:55 - 10:15 |
|       | <b>Towards detectors for HET factories / electronics, mechanics, integration</b> | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> | 10:20 - 10:40 |
|       | <b>coffee break</b>  |  |               |
| 11:00 | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>                 |  | 10:45 - 11:15 |
|       | <b>WG1 (physics potential):Subgroup-1 report/plans</b>                           | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> | 11:15 - 11:25 |
|       | <b>WG1 (physics potential):Subgroup-2 report/plans</b>                           | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> | 11:30 - 11:40 |
|       | <b>WG1 (physics potential):Subgroup-3 report/plans</b>                           | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> | 11:45 - 11:55 |
| 12:00 | <b>WG1 (physics potential):Subgroup-4 report/plans</b>                           | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> | 12:00 - 12:10 |
|       | <b>WG1 (physics potential):Subgroup-5 report/plans</b>                           | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> | 12:15 - 12:25 |
|       | <b>Poster prizes and 10min talks by two winning posters</b>                      | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> | 12:30 - 12:55 |
| 13:00 | <b>lunch break</b>   |  |               |
|       | <b>ECFA Report: plans from WG3; discussion</b>                                   | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> | 15:05 - 15:20 |
|       | <b>Next steps and timelines for ECFA Report; approval process</b>                | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> | 15:25 - 15:35 |
|       | <b>Discussion: what is missing; how to engage in ESPPU process</b>               | <i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> | 15:35 - 15:50 |



# 3<sup>rd</sup> ECFA workshop on e<sup>+</sup>e<sup>-</sup> Higgs, Top & ElectroWeak Factories

9–11 October 2024



9–11 Oct 2024

Campus des Cordeliers, Paris, Metro Odeon

Europe/Paris timezone

Enter your search term



- Overview
- Committees
- Timetable**
- Call for Abstracts
- Contribution List
- Participant List
- Poster session
- Venue
- Accommodation
- Workshop poster

Contact

✉ [gregorio@in2p3.fr](mailto:gregorio@in2p3.fr)

✉ [svydelingum@apc.in2p3.fr](mailto:svydelingum@apc.in2p3.fr)

## Timetable

mer. 09/10 | **jeu. 10/10** | ven. 11/10 | All days

Print | PDF | Full screen | Detailed view | Filter

|       |              |   |               |
|-------|--------------|---|---------------|
| 08:00 | Registration | Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon | 08:00 - 09:00 |
| 09:00 | Plenary      | Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon | 09:00 - 10:30 |
| 10:00 | coffee break | Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon | 10:30 - 11:00 |

Tuesday

- 51 persons pre-registered
- 31 fully paid.
- More publicity this week

# FCC: FRANCE – ITALIE 4-6 novembre, Venise

## 2ND "FCC ITALY & FRANCE WORKSHOP"

VENICE, PALAZZO FRANCHETTI - NOVEMBER 4 - 6, 2024

2nd FCC Italy & France Workshop

Nov 4 – 6, 2024  
Venice  
Europe/Rome timezone

Powered by [Indico](#) v3.2.9

- [Help](#)
- [Contact](#)
- [Privacy](#)

Logos: INFN, CNRS, Future Circular Collider, CEA, EU, Dipartimento di Fisica e Astronomia Carlo Galvani

- Overview
- Registration
- Organizing Committees
- Organization for FCC Project in Italy and France & contacts
- Scientific Program
- (Preliminary) Agenda Skeleton
- Travelling to Venice
- Accommodation in Venice
- FCC POSTER

The second joint FCC-France&Italy workshop on Higgs, Top, EW, HF and SM physics will take place at Palazzo Franchetti, in Venice from 4-6th of November 2024.

In 2020 CERN started a feasibility study for the construction of a Future Circular Collider (FCC) in the Geneva region with a circumference of about 100 km. An e+e- collider (FCC-ee), covering the energy range from the Z pole up to the top pair production threshold is the first step to collect incredible statistics of the heaviest particles of the SM. The FCC integrated project, that includes the hadron collider FCC-hh, offers an incredible discovery potential with a careful mixture of precision measurements sensitive to very weak couplings or to very heavy objects, and very high energies where the new heavy particle could be directly produced.

During this 5 year process, toward the preparation of a document for the next European Strategy for Particle Physics, it is important to perform all the studies needed to design detector concepts able to satisfy the needs of the extensive physics program and this workshop happens at a crucial time in the process.

In this workshop, the current status of the most recent advances in the R&D for the accelerator and detectors, will be presented. In addition, there will be sessions dedicated to the experimental and theoretical developments for the various physics topics, from Higgs and electroweak precision measurements to flavour physics (including top) and BSM sensitivities. Plenary sessions will be devoted to overall summaries of the current status of the various aspects, while the parallel sessions will focus on specific areas.

The workshop aims at intensifying French and Italian collaboration and participation to the FCC feasibility study through detailed studies on physics possibilities and the constraints that these entail on the detectors, and through accelerator and detector concepts studies and R&D.

The workshop will happen at a crucial time towards the preparation of the final document to be provided as input to the next European Strategy in Spring 2025 so we look forward to new inputs and contributions from the community at large.

### FCC Contact

[FCC Italy France conta...](#)

## Scientific Program

### Physics Studies (theory and experiment)

- Higgs
- Electroweak
- Flavour
- Top
- Beyond Standard Model

### Detector

- Vertex
- Tracking systems
- Electromagnetic Calorimeter
- Hadronic Calorimeter
- Muon
- PID
- Timing
- MDI

### Accelerator

- MDI and Interaction Region
- Main Rings
- Collective effects
- Injector
- Booster

### ECR Discussion

- Common IT-FR thesis proposals
- Researcher mobility between IT-FR
- How to combine work for LHC experiment and FCC?

## Goals (a bit more detailed)

→ Produce EOI for proto detector concepts A,B,C,D,E...

→ Produce EOI for subdetectors:

EOI for muVTX-1 mu-VTX-2

EOI for DC, TPC, All silicon

EOI for Noble liquid, Dual-Readout, Calice-Like

EOI for HCAL-1, HCAL-2

EOI for Muon-Detectors: MD1, MD2

...

=====

- Identify at least 2 editors per subdetector (SD) note by September 2024
- Submit SD-EOI's by March 2025
  
- Identify at least one editor per subdetector for each detector concept (DC) by September 2024
- Submit DC-EOI's by March 2025

# Conclusions

- Participate / Register to the ECFA-Paris and the FCC-France-Italie (Venice) workshops !
- Contribute to at least one EOI for subdetectors, or to a physics case (hence to the final FCC feasibility study)