

Reunion FCC-contacts



Friday Dec 12, 2025, 9:00 AM → 10:30 AM Europe/Paris

9:00 AM → 9:30 AM **News de la stratégie, de FCC / Evolution vers la phase pre-TDR**

🕒 30m

Speaker: Gregorio Bernardi (APC Paris CNRS/IN2P3)

9:30 AM → 9:55 AM **Debrief du workshop FCC-France.**

🕒 25m

Speakers: Catherine Biscarat (L2I Toulouse, CNRS/IN2P3, Université de Toulouse), Farès Djama (CPPM), Gaelle Boudoul (IP2I/AICP (CNRS/IN2P3)), Giovanni Marchiori (APC Paris), Jean-Baptiste De Vivie De Regie, Luc Poggioli (LPNHE Paris), Marco Delmastro (LAPP), Nicolas Morange (IJCLab), Stephane Monteil (Laboratoire de Physique de Clermont - UCA/IN2P3), Suzanne GASCON-SHOTKIN (IP2I Lyon/Université Claude Bernard Lyon 1), Vincent Boudry (Laboratoire Leprince-Ringuet, CNRS/IN2P3, École polytechnique), Ziad EL BITAR (IPHC)

9:55 AM → 10:05 AM **FCC-France-Italie à Marseille en Novembre 2026**

🕒 10m

Speaker: Fares DJAMA (CPPM)

Meeting with President of Council

Verdict of Council on Feasibility Study was reported in last PED Coord.

Shortly after that meeting we (CG, PJ and GW) have an informal meeting with the President (Costas Fountas) to receive further feedback.

He confirmed his satisfaction with how things are progressing. He considers that there is no particular PED deliverable that Council is expecting for the coming phase (but no doubt they will notice if we make no progress, so we should pay attention to our already defined goals!)

The need for an 'Elevator Pitch' for the physics goals of FCC did arise in the discussion (grr!), but this seems a personal wish of Costas himself rather than a demand from Council as a whole.

Engagement with Australia

Status until now: no institute in Australia has signed FCC MoU, or is active in FCC.

Opportunity for changing this: last month Michael Benedikt visited several Australian institutes. They expressed a keenness to become involved in both accelerator and PED activities.



In particular, he engaged with Adelaide (Paul Jackson), Monash (Jordan Nash) and Sydney (Kevin Varvell). They identified flavour physics as a possible contribution.

We will write to them and invite them to become active. Do you have contacts?

Aside: MB did not mention Melbourne in this context.
Are they still committed to ILC (Geoff Taylor) ?

Mandate for the FCC Physics Studies Work Package during the FCC pre-TDR phase (2025-2027)

Context

The FCC Physics Studies Work Package forms one of the components of the Physics, Experiments and Detectors (PED) pillar, along with Software and Computing, Detector Concepts, Machine Detector Interface, and Energy Calibration, Polarisation and Monochromatisation Work Packages. Its main role is to support and encourage a community of theorists and experimentalists who can commit resources (mostly human) to the development of the FCC science program in the coming years. It builds on the previous Physics Programme and Physics Performance work packages, now merged into a single unified entity, “Physics Studies”, and provides, among other things, “Physics Requirements” to all other Work Packages.

The new structure is still organised around physics groups covering the full FCC physics landscape, including new responsibilities at the physics–software interface (MC event generation, precision calculations, and high-level reconstruction), and on a common mandate. The goals are, in particular, to

- articulate the physics case, feasibility, and schedule implications of different stages of the project (not limited to the currently proposed stages);
- gather the worldwide theory community to address the theoretical challenges and provide new conceptual solutions to implement and interpret experiment measurements;
- define and implement strategies to match the experimental and theoretical uncertainties to the projected statistical precision;

and to document the findings in a detailed note accompanying the pre-TDR report (to be delivered to the CERN Council in September 2027).

The following groups form the basis of the organisation (existing, **already exists**^{NOT} **formally**, **new**):

- Electroweak physics
- Higgs physics
- Top-quark physics
- Flavour physics
- QCD and photon-photon physics
- BSM physics
- **FCC-hh physics**
- **High-level reconstruction (in close collaboration with the Software group)**
- **Monte Carlo tools (in close collaboration with the Software group/Precision)**
- **Analysis Tools (in close collaboration with the Software group)**
- **Precision calculations**
- **Global fits and EFT**

Results from Ascona

A SCIENTIFIC MISSION FOR THE 21ST CENTURY

The Future Circular Collider (FCC) is Europe's next-generation particle collider: a unique tool to explore the deepest mysteries of the Universe and to drive technology, innovation and skills for decades to come.

DECODING THE UNIVERSE

We now know that the Standard Model of particle physics—one of the great scientific achievements of the last century—describes only 5% of the Universe.

The origin of matter, the nature of dark matter and dark energy, and the early evolution of the Universe all remain largely unexplained.

The discovery of the Higgs boson at the LHC opened a new pathway to investigate these and other questions.

The FCC is the instrument that will allow Europe to pursue this frontier with unprecedented precision, sensitivity and discovery potential and to maintain world leadership in particle physics and related technologies.

THE FCC WILL

- Measure the Higgs boson and other key particles with unmatched precision.
- Search for new particles, new forces and potential dark-matter candidates.
- Probe the disappearance of antimatter in the early Universe.
- Explore entirely new phenomena through radical gains in energy, precision and sensitivity.

AN ENGINE OF INNOVATION

Building the FCC requires breakthroughs in superconducting materials, efficient radio-frequency systems, advanced vacuum technologies, precision detectors, AI-driven control systems, and sustainable cooling infrastructures. These technologies have direct relevance inter alia to medical imaging and therapy, fusion energy, transport electrification, industrial automation, and large-scale data centres.

AN INVESTMENT THAT PAYS OFF

CERN's high-tech procurement, training mission and industrial partnerships already generate substantial value for Europe. The FCC, through decades of construction and operation, will:

- Train thousands of early-career scientists, engineers and technicians each year,
- Stimulate high-tech industry via long-term procurement and co-development,
- Deliver a positive benefit-cost ratio, even under conservative assumptions.





Technology & innovation for Europe

The virtuous circle of basic science

CERN's ambitious scientific goals drive innovation across many enabling technologies. Famous examples are the World Wide Web and PET imaging. CERN technologies are transferred to society without financial profit, reinforcing Europe's leadership in strategically important fields.

The FCC will be the most extraordinary instrument ever built to study the fundamental constituents and laws of nature. Its tunnel will first house an electron-positron collider **FCC-ee** capable of extremely precise measurements. This may be followed by a proton-proton collider **FCC-hh** operating at unprecedented energies.

Partnership with industry

CERN spends around **500 MCHF** annually with European high-tech suppliers through competitive contracts and co-development. Past flagship projects such as the LHC mobilised over **6000 companies** across Europe.

As CERN requires many technologies that do not yet exist, it often develops them in-house in collaboration with trail-blazing industries in the respective domain.

Companies place a premium on collaboration with CERN because its demanding specifications **enhance their growth, quality, innovation and reputation**. Competencies gained are then passed down the line to other companies, fields and clients.

Accelerating science and society

Of the tens of thousands of accelerators in use worldwide, only a few are used for particle physics. The rest support semiconductors, materials processing, radiotherapy, isotope production, imaging, and advanced X-ray light sources that underpin Nobel-prize-winning research. CERN's world-leading expertise in magnets, superconductors, vacuum, cryogenics, instrumentation and other technologies is already applied to gravitational-wave observatories, fusion energy, next-generation X-ray facilities, and medical accelerators.

This challenging project will boost innovation in:

- **Superconductors & magnets:** for fusion reactors, medical imaging and efficient power transport.
- **High-performance materials:** relevant to aerospace, automotive and advanced energy systems.
- **Vacuum and cryogenics:** with applications in hydrogen transport, refrigeration and industrial processes.
- **Advanced AI, electronics and robotics:** enabling safer, more efficient industrial operations.
- **High-efficiency RF systems:** essential for medical and industrial accelerators and for energy-efficient broadcasting.
- **Distributed computing and big data:** with applications in communications and large-scale data-handling.

Over the past 5 years, CERN has established over **250 knowledge transfer partnerships** across healthcare, aerospace, digital innovation, quantum technologies and environmental applications.

Examples include advanced superconducting systems with **Airbus**, computer-vision tasks for automotive applications with Volvo Cars-owned software company **Zenseact**, power-distribution R&D with **Meta**, and identification of energy-saving scenarios through data-driven energy efficiency audits with **ABB Motion**.

€440M of European Union co-funding since 2020 has supported 85 CERN-linked projects involving European industry.

Societal benefits & sustainability

A strong return on investment

Independent socio-economic assessments show that the FCC-ee (civil engineering & operation) yields a **benefit-cost ratio of at least 1.2**, even when only the most conservative benefit pathways are counted.

Economic contribution

The FCC-ee will create an estimated:

- **50 BCHF** direct and indirect economic effects
- **4 BCHF** through added household spending

Public willingness-to-pay studies show that the perceived FCC value **exceeds** the current annual contribution of Member States.

Training and upskilling

At any moment, CERN trains over **5,500 students, technicians and early-career researchers** across a large spectrum of competencies, most of whom move into industry, applied science and public institutions.

The FCC will extend this high-value skills pipeline throughout the 21st century, forming a key pillar of Europe's STEM workforce and innovation ecosystem.

Capacity building across Europe

CERN is the shared laboratory of all its 25 Member and 10 Associate Member States and has around 50 International Cooperation Agreements with additional countries and territories.

CERN's partnerships with universities, institutes and industries build durable **transnational value chains** and foster scientific and technological capacity in all participating countries.

The FCC will be developed under CERN's leadership with coordinated contributions from other large laboratories. Shared technology platforms will enhance **Europe's strategic capabilities** and strengthen its research and technology ecosystem, through:

- the repatriation of skilled personnel,
- long-term R&D programmes,
- cross-disciplinary collaboration and access to a world-leading scientific infrastructure.

Boosting trust in science

The deep questions in particle physics and the vast machinery required to address them inspire and attract young minds to science. The switch-on of the LHC in 2008 is estimated to have reached an audience of more than a billion people.

CERN's broad portfolio of inclusive education, communication and engagement activities is essential to strengthen public trust in science, foster critical thinking, and counter misinformation.

CERN's teacher programmes empower about 1000 high-school teachers per year, while its IdeaSquare platform hosts future entrepreneurs who apply CERN technologies to societal challenges.

The new CERN Science Gateway has increased the number of annual visitors to CERN to 400 000 people from 175 countries.

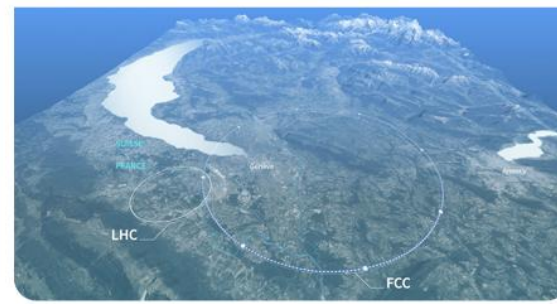
The value of physics to Europe

Physics-based activities in Europe are estimated to have employed 20M people and generated more than €7T of turnover in 2022 (growing by 47% since 2016), according to a recent report by the Centre for Economics and Business Research that was commissioned by the European Physical Society.

Sustainable by design

The FCC is an exemplar of sustainable research:

- Over **100 site-placement scenarios** for the FCC were evaluated for environmental impact.
- Despite its scale, **FCC-ee will use similar electricity to the LHC**, yet deliver vastly more data per unit of energy.
- The FCC-ee design is **100 000x more energy-efficient** than its predecessor LEP in terms of delivered data.
- The **OpenSkyLab initiative** is pioneering ways to transform excavation materials from the FCC tunnel into functional soils for greening, agriculture and forestry.
- CERN holds **ISO 50001** certification for continuous energy-performance improvement.
- The FCC-ee will be the first large scientific infrastructure to systematically adopt the Reliability, Availability, Maintainability and Safety concept, profiting all future first-of-a-kind projects such as a fusion reactor.



Feasibility, timeline & Europe's decision

Feasibility

The **FCC Feasibility Study** (1500 experts, 162 institutes, 38 countries) confirms that the project is **technically feasible**.

CERN has a strong record of delivering flagship projects **on budget** and with long-term industrial participation.

The estimated **15 BCHF** investment for the first stage, FCC-ee, would be spread over ~12 years.

Importantly, the 9 BCHF **tunnel and technical infrastructure may be reused** for a possible future hadron collider (FCC-hh), maximising sustainability and value.

A solid foundation for success

Europe's investment in CERN over the past 70 years has created unparalleled technical infrastructure and expertise.

The **LHC**, which placed Europe at the forefront of high-energy physics, completes operations in **2041**.

Given the **20–30-year lead time** of major scientific infrastructures, decisions on the next flagship facility must be taken now to ensure continuity, capability and leadership.

A collaborative, global endeavour

CERN brings together some 17 500 researchers from **110+ nationalities**, including countries in conflict and from developing regions.

Its results and data are **openly shared** for the benefit of all, making CERN a global model of scientific cooperation.

The FCC would secure continued world leadership in a critical area of groundbreaking science and technology, thus strengthening **European competitiveness and strategic autonomy**.

At a glance

FCC

90.7 km

Circumference

200 m

Average depth

4

Underground experiments

€4 B

Local economic impact

1.2

Benefit-cost ratio

CERN

1.3 BCHF

Annual budget

500 MCHF

Annual spending with European high-tech industry

12,405

Users from 110+ countries

2704

Staff members

1181

Graduates and fellows


400,000

Visitors annually

Timeline



Réunion des groupes de travail de préparation des argumentaires FCC/France

 Monday Jan 19, 2026, 9:30 AM → 4:00 PM Europe/Paris

 IP2I

Description Nous nous retrouvons afin d'échanger sur les avancées des différents groupes de travail pour la définition d'argumentaires nationaux pour la communication autour du futur projet FCC du CERN.

Chaque groupe aura l'occasion de présenter l'état de ses réflexions. Ce sera l'occasion de partager et d'échanger entre groupes pour converger une vision intégrée des argumentaires.

Il sera possible de suivre la journée en distanciel (lien Zoom à venir)

Le découpage de l'ordre du jour est purement indicatif à ce stade.

9:30 AM → 10:00 AM

Accueil



10:00 AM → 11:00 AM

Atelier 1 - argumentaires pour soutenir la recherche fondamentale

11:00 AM → 12:00 PM

Atelier 2 - argumentaires pour la physique des particules

12:00 PM → 1:00 PM

Atelier 3 - argumentaires pour FCC

1:00 PM → 2:00 PM

Pause déjeuner



2:00 PM → 3:00 PM

Atelier 4 - argumentaires sur le développement durable, l'impact sociétal notamment pour l'état-hôte

3:00 PM → 4:00 PM

Atelier 5 - argumentaires sur les technologies, l'impact économique et industriel

Next FCC-contacts meetings

		19/1 Lyon
Friday 9-10.30	23/1 : Com/Web	
Friday 9-10.30	13/2 : MP status (1)	26- 30/1 Munich
Friday 9-10.30	13/3 : MP status (2)	
Friday 9-10.30	10/4 : Progress for FCC week (1)	
?? 9-10.30	??/5 : Progress for FCC week (2)	
Friday 9-10.30	19/6 : FCC Structure evolution	8-12/6 Helsinki

Jamboree: July 6, Monday morning

9th FCC Physics Workshop: Munich, Jan. 26-30, 2026

indico agenda: <https://indico.cern.ch/event/1588696/>

	Monday 26.01	Tuesday 27.01	Wednesday 28.01	Thursday 29.01	Friday 30.01	
8:30-9:00						8:30-9:00
9:00-9:30	-- Satellite meeting -- ECR meeting	-- Parallel Sessions -- 1. Physics (general) 2. EPOL	-- Parallel Sessions -- 1. Jt Software, Detectors and Physics (local reconstruction) 2. MDI (IR layout and beam dynamics)	-- Parallel Sessions -- Jt SW & Physics & Detectors (global reconstruction)	-- Summaries/Highlights --	9:00-9:30
9:30-10:00						9:30-10:00
10:00-10:30						10:00-10:30
10:30-11:00		Coffee break	Coffee break	Coffee break	Coffee break	10:30-11:00
11:00-11:30		-- Parallel Sessions -- 1. Physics. (Higgs/EW) 2. EPOL	-- Parallel Sessions -- 1. Physics (BSM) 2. Detectors (detector concepts, large scale structures and cryostats)	-- Parallel Sessions -- 1. Physics (FCC-hh) 2. Jt MDI & SW & Detectors (detector backgrounds, beam backgrounds)	-- Summaries/Highlights --	11:00-11:30
11:30-12:00						11:30-12:00
12:00-12:30						12:00-12:30
12:30-13:00	Lunch	Lunch	Lunch	Lunch	Lunch	12:30-13:00
13:00-13:30						13:00-13:30
13:30-14:00						13:30-14:00
14:00-14:30	-- General FCC Meeting --	-- Parallel Sessions -- 1. Physics (Higgs/EW) 2. MDI (mechanics and integration)	-- Parallel Sessions -- 1. Physics (QCD+Flavour) 2. Software and Computing (Key4HEP, LEP@E4H, resources)	-- Parallel Sessions -- 1. Jt SW & Physics (analysis) 2. Detectors (calorimetry, magnets)	-- Satellite meeting -- TBC	14:00-14:30
14:30-15:00						
15:00-15:30						14:00-15:30
15:30-16:00						15:30-16:00
16:00-16:30	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break	16:00-16:30
16:30-17:00	-- PED Plenary --	-- Parallel Sessions -- 1. Physics (BSM) 1. Jt Detectors & SW (simulation, digitisation)	-- Parallel Sessions -- 1. Physics (QCD+Flavour) 2. Jt Detectors & MDI (detector integration, beam pipe, and IR)	-- Parallel Sessions -- 1. Detectors (tracking and vertexing) 2. Physics (higher order calculations)	-- Satellite meeting -- TBC	16:30-17:00
17:00-17:30						17:00-17:30
17:30-18:00						17:30-18:00
18:00-18:30						18:00-18:30
18:30-19:00	Welcome reception	IFNC session				18:30-19:00
19:00-19:30						19:00-19:30
19:30-20:00						19:30-20:00
20:00-20:30			Workshop Dinner			20:00-20:30


FCC France

Physics Studies

Présidents de session: Bogdan MALAESCU (LPNHE, Paris, FRANCE), Jean-Baptiste De Vivie De Regie

16:45 New developments for the FCC-ee Physics program

Orateur: Michele Selvaggi (CERN)

 FCC-France-Physics...


17:10 QCD studies with jets for FCC-ee

Orateur: Line Delagrang (LPNHE, Paris, France)

 QCDwithJets@FCC...


17:28 Improvements In ZH cross section measurements

Orateur: M. Tom FOURNIER (APC Paris CNRS/IN2P3)

 ZH_improvement_F...


17:46 Precision measurements of Higgs branching ratios

Orateur: Alexis Maloizel (APC, Paris)

 FCC_DRD_France_N...


18:04 Heavy Flavour recent results

Orateur: Stephane Monteil (Laboratoire de Physique de Clermont - UCA/IN2P3)

 FCC_FlavoursWS_s...

18:22 Ultra granular calorimeter and flavour physics

Orateur: Jean-Claude Brient (LLR)

 FCC flavor physics ...

18:40 Physics prospects for FCC-hh

Orateur: Michele Selvaggi (CERN)


 FCChh_fccfrance_v...

5 DRD Tracking

Présidents de session: Didier Contardo, Gaëlle Boudoul ((IP2)/AICP (CNRS/IN2P3))


09:00 R&D CMOS (zoom)

Orateur: auguste besson (Institut Pluridisciplinaire Hubert Curien)

 FCCFrance_RD_CM...


09:20 FCC-Seed concept (zoom)

Orateur: jeremy andrea (IPHC)

 FCC-SEED_FCCFran...


09:40 Manta Project In DRD3

Orateurs: Didier Contardo (IN2P3/CNRS), Didier Contardo

 FCC_France_MANT...


10:00 CMOS & timing

Orateur: Philippe Schwemling (Université Paris Cité and CEA/Irfu/DPHf)

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10:20 TPC & Ion Back Flow

Orateurs: Paul Colas (CEA/DAPHNIA Saclay), Serguei Ganjour (CEA/Saclay/IRFU/SPP)

 Recent activities on...

0 coffee break

5 DRD Calorimetry

Présidents de session: Fares DJAMA (CPPM), Vincent Boudry (Laboratoire Leprince-Ringuet, CNRS/IN2P3)

11:00 R&D High Granularity ECal


Orateur: JEROME NANNI (LLR-CNRS/IN2P3)

 FCC_DRD_Worksho...

11:20 TSDHCAL (Zoom)


Orateurs: Imad Laktineh ((UNIV CLAUDE BERNARD)UMR5822), imad laktineh (In2p3-ucbl)

 Laktineh-FCCeeFra...

 Laktineh-FCCeeFra...


11:40 ALLEGRO

Orateur: Zhibo Wu

 FCCFrance2025_AL...


12:05 Grainita

Orateurs: Mille Yingrui Hou, Yingrui Hou (LPC Clermont)

 GRAINITA_FCC_DR...

12:30 MODOP - MaxiCC

Orateur: Suzanne GASCON-SHOTKIN (IP2I Lyon/Université Claude Bernard Lyon 1)


 SuzanneMAXI0CM...

5:15 Other DRD's

Président de session: Suzanne GASCON-SHOTKIN (IP2I Lyon/Université Claude Bernard Lyon 1)


14:15 The CALOROC family

Orateur: Christophe de LA TAILLE (OMEGA)

 CdLT_FCC_27nov20...


14:35 DRD7 activity overview (zoom)

Orateur: Marlon BARBERO (CPPM)

 DRD7activities.pdf

14:55 Summary 1st FCC-ee TDAQ Workshop

Orateur: Vincent Boudry (Laboratoire Leprince-Ringuet, CNRS/IN2P3, École polytech)


 2025-11-27@FCC-F...

5:30 FCC Software and Analysis

Président de session: Ziad EL BITAR (IPHC)


15:15 Progress on particle flow

Orateur: Giovanni Marchiori (APC Paris)

 2025-11-27 - Partic...


15:40 Combined talk : Digitization for tracker/vertexing full simulation . Background

Orateurs: Gaëlle Boudoul ((IP2)/AICP (CNRS/IN2P3)), Jessy DANIEL (IP2I, groupe)

 FCCFrance_Nov27_...

16:15 APRIL Particle Flow Algorithm (Zoom)

Orateur: Tanguy PASQUIER (IP2I, Univ Lyon 1)

 FCC_France_2025_...

7:00 Coffee break

9:45 Participations Françaises aux futurs detector concepts


Présidents de session: Didier Contardo (IN2P3/CNRS), Gregorio Bernardi (APC Paris CNRS)

17:00 Introduction

Orateurs: Gregorio BERNARDI (APC Paris, CNRS/IN2P3), Gregorio Bernardi (APC Paris, CNRS/IN2P3)


17:20 ALLEGRO

Orateur: Fares DJAMA (CPPM)

 ALLEGRO_Djama.pdf


17:30 CLD

Orateur: jeremy andrea (IPHC)

 CLD_FCCFrance25_...

17:40 IDEA

Orateur: Suzanne GASCON-SHOTKIN (IP2I Lyon/Université Claude Bernard Lyon 1)

 SuzanneIDEA_FCC_...

17:50 ILD

Orateur: Vincent Boudry (Laboratoire Leprince-Ringuet, CNRS/IN2P3, École polytech)

 2025-11-27@FCC-...

18:00 Discussion


Orateurs: Didier Contardo (IN2P3/CNRS), Didier Contardo

PED priority items for the pre-approval phase

1. Lay the foundations for the conceptual design studies of four (or more) **detectors**
2. Consolidate **IR** layout, detector integration, and related background mitigation
3. Collaborate with **IT** to develop a computing architecture model for experiments
4. Complete the **software & analysis toolkit** to ease detector performance comparison
5. Confirm, with full analyses, the current uncertainty estimates on **EWPOs** (Z and W)
6. Gather the worldwide **theory community** to address the theoretical challenges
7. Streamline and optimise the procedure for **centre-of-mass energy calibration**
8. Develop an efficient PED **Education/Communication/OutReach/InReach** strategy
9. Ascertain the **detector cost estimate**
10. Articulate the physics case, feasibility, and schedule implications of **other vs stages**
11. Anticipate FCC-PED **structure and management** in the project phase (2027-2033)

Planning scenario towards 4 experiments at FCC-ee

french interests associated with an R&D program in red

- 2023 DRD formation, French contribution w/ ongoing R&D related to FCC-ee systems:
 - DRD1 TPC, DRD3 VD-Tracking/PID layers; DRD6 HG-E(H)Calo, LNG-ECalo, CrystalShashlik-ECal (GRAiNITA)
- 2025 French EoI [contributions to ESPP 2025](#)
 - subsystems : Si/W-ALLEGRO-GRAiNITA-DRCrystal E-Calor, TSDHCAL; VD/Seed, Tracking/PID layers
 - Detector Concepts : ALLEGRO, CLD, IDEA, ILD 
- 2028-2029 after FCC approval \gtrsim 4 collaborations forming...
- 2031-2032 CDR - selection of 4 detector concepts (FCC-Committee)
 - cost considerations, merging of collaborations, possibly systems/technology variants remaining...
- 2035-2036 TDR - final selection of subsystems and technologies

Current institute interests

By subsystems (based on ongoing R&D)

- Tracking (DRD1, DRD3)
 - TPC : IRFU
 - VD - Tracking/PiD : APC, CPPM, IPHC, IP2I, IRFU, IJCLab, LPNHE
- Calorimetry (DRD6)
 - HG-E(H)Calo : IJCLab, LLR, LPNHE, (IP2I)
 - LNG-ECalo : APC, CPPM, IJCLab, LAPP, LPSC
 - CS-ECalo: IJCLab, LPCA

By detector concepts (based on ongoing R&D)

Calorimetry driven

- CLD/ILD : IJCLab, LLR, LPNHE, IP2I (if RPCs)
- ALLEGRO : APC, CPPM, IJCLab, LAPP, LPSC
- CSDC : IJCLab, LPCA
- IDEA : ?

VD, Tracking/PID driven

IPHC, IP2I, 1 of any concept
IRFU, 1 of any concept (CLD/ILD if TPC)

By Physics areas

- Higgs : APC, CPPM, IJCLab, IP2I, IRFU, LAPP, LLR, LPSC, L2IT
- ElectroWeak : IJCLab, IRFU, LAPP, LPNHE, LPCA LPSC
- Top : IPHC, IP2I, LPCA
- BSM : CPPM IJCLab, IPHC, IP2I, IRFU, LLR
- HFL : IJCLab, IRFU, LLR, LPCA
- QCD : LPNHE

Considerations for preparation of detector concept choices (2026-2027)

- Contributions to at least 3 detector concepts appear plausible
 - process/leadership for collaboration formation not yet defined
 - need to think how we will contribute to this process in France
- 2026-2027 French community should prepare decisions
 - teams should increase/reach critical mass, contribution wishes of HL-LHC teams should be identified now, even if they can only join around CDR time $\gtrsim 2030$
 - institutes can formulate their current preferences for calorimetry & tracking association
 - to assess in common global detector concepts performance (PED framework see C. Grojean)
 - institutes can prioritise contributions to subsystem(s) at an early stage (if involved in several)
- IRFU/IN2P3 management can provide guidance on process and calendar to approve contributions
- Plenty of work in front of us !

FCC France Italie

