Reunion organisation workshops 2024 + FCC-contacts

jeudi 26 sept. 2024, 09:00 → 10:15 Europe/Paris

Description

09:00 → 09:20 **News + FCC-contacts / Préparation EAP** 20m

Orateur: Gregorio Bernardi (APC Paris CNRS/IN2P3)

09:20 → 09:40 **Tour de table de l'organisation du workshop ECFA** 20m

Orateurs: Catherine Biscarat (L2I Toulouse, CNRS/IN2P3, UT3), 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), Maxim Titov (CEA Saclay, IRFU/SPP), Nicolas Morange (IJCLab), Paul Colas (CEA/DAPNIA Saclay), Stephane Monteil (Laboratoire de Physique de Clermont - UCA/IN2P3), Suzanne GASCON-SHOTKIN (IPN Lyon), Vincent BOUDRY (LLR - CNRS, École polytechnique/IPP Paris), Ziad EL BITAR (IPHC)

09:40 → 10:00 **Point sur FCC France-Italie** 20m

EP/FCC group at CERN

- Since 01-Sep-2024, FCC has a home in the EP department
  - Group Leader: Patrick Janot
  - Current composition: 6 Staff, 4 fellows, 1 doctoral student, 2 technical students, 1 scientific associate, and 3 (unpaid) visiting scientists
  - Budget for travel and a few months of visiting scientists granted by EP for 2024
  - Budget for staffs, fellows, students (MTP) starting in April 2025

- CERN EP/TH Faculty meeting might increase the participation with insiders
  - Friday 27 September 2024 (9h-13h), https://indico.cern.ch/event/1431830/

- To outside institutes
  - Don't hesitate to ask candidates interested in working on FCC (even if only 50% of the time) to apply to research fellowship or research LD staff positions
  - More generally, don't hesitate to advertise this new group in your institute / country. The absence of a group in the host lab was a longstanding criticism (or even a pretext), delaying the commitment of other institutes / physicists to the FCC project.

PED Coordination

- Recent and near-future events
  - Christophe Grojean moved back to DESY (after a year of sabbatical at CERN)
  - Patrick Janot became EP/FCC group leader (with reduced availability for PED coordination)
  - The FCC Feasibility Study comes to an end in March 2025
  - The European Strategy Update and the FCC pre-TDR phase start in April 2025
- All the above call for an additional co-coordinator for the coming phases of FCC
  - Consulted Fabiola Gianotti and Michael Benedikt (and a few wise people)
  - Discussed with all work-package coordinators
  - Asked suggestions from the PED steering group (in previous coordination meetings)
- Outcome of the exercise
  - One candidate proposed: Guy Wilkinson
    - Guy will be on sabbatical at CERN for the whole of 2025
  - Unanimously praised as "good/excellent/ideal choice" by all
  - Guy accepted to be FCC PED co-coordinator as of 01.01.2025
    - Joining Patrick and Christophe, with increasing commitment during the last quarter of 2024
    - In parallel, Patrick will slightly decrease his commitment in 2025 (but stay as a third co-coordinator)

Any comment?

- We will be in good hands during the pre-TDR phase and the European Strategy Update

European Union Competitiveness Report

- 400-page report made public by Mario Draghi on Monday 9 September 2024
  - Available for your perusal from today's indico agenda
  - Handed to Ursula von der Leyen (European Commission president) for subsequent action
  - Urges the EU to invest 800 billion euros annually [with specific guidance]
    - To close the economic gap between the US and **China** (consistently seen as a threat throughout the report)
- CERN mentioned 19 times in the report, FCC mentioned 3 times!
  - No mention of ILC, CLIC, muon colliders, AWAKE, gravitational waves, etc.
- Excerpts (see p.236 and p.252) - as important as White House/CERN statement last April

The CERN success story

The Large Hadron Collider has propelled CERN to global leadership in particle physics – a mantle that has shifted from the US to Europe – and it stands as CERN's flagship facility. One of CERN's most promising current projects, with significant scientific potential, is the construction of the Future Circular Collider (FCC): a 90-km ring designed initially for an electron collider and later for a hadron collider. Chinese authorities are also considering constructing a similar accelerator in China, recognising its scientific potential and its role in advancing cutting-edge technologies. If China were to win this race and its circular collider were to start working before CERN's, Europe would risk losing its leadership in particle physics, potentially jeopardising CERN's future.

Invest in world-leading research and technological infrastructure

We have already discussed the remarkable returns from the creation of the European Organization for Nuclear Research (CERN) and emphasised that the future of CERN is at risk due to China's progress in emulating one of CERN's most promising current projects, the Future Circular Collider (FCC). Refinancing CERN and ensuring its continued global leadership in frontier research should be regarded as a top EU priority, given the objective of maintaining European prominence in this critical area of fundamental research, which is expected to generate significant business spillovers in the coming years.

ESPPU national preparatory meetings

- France (20-21 January 2025, Paris)
  - SM and BSM highlight review, 4 November, zoom (indico link)
  - Dedicated session at IRN Terascale meeting, 13 November, Lyon (indico link)
  - ”Concluding workshop”, 20-21 January 2025, Paris
- Germany
  - ”Non-collider Physics”, 22-24 November.24, Bad Honnef
  - ”Collider Physics”, 27-29 November 24 at DESY, Hamburg
  - ”Concluding workshop”, 19-22 January 25 at Bad Honnef
- Italy
  - INFN & ESPPU, 6-7 May 2024, Rome (indico link)
- Poland
  - 19 September 2024

- Others? Spain, Switzerland, UK, USA…?
  - Please let us know and we’ll add the information

See also the talks by Felix and Gregorio later today.
There will also be a dedicated IFNC meeting at 5pm today (indico link).

Inputs to European Strategy (by March 2025)

Examples of FCC-useful input to the ESPP, in a given country:

- FCC Feasibility Study
- National Strategy document (all fields)
- EoI's for FCC subdetectors
- EoI's for FCC detector concepts
- EoI's/Notes on National (or Regional) FCC Activities

EoI's/Notes on National (or Regional) FCC Activities

Goal: give an overview of activities related to future e+e- colliders in the country/region:

Can be presented as compact notes (3-6 pages) along the line:

Assuming FCC moves forward, we would continue/start to contribute in these fields:

- List of Detector/R&D activities
- List of Software/Analysis activities
- List of Theory activities

with references to Feasibility study, EoI's, ECFA or other notes.

We can refer to results obtained in local workshops (and list them)

We list institutions participating, detailing in which field they contribute.

Expressions of Interest

FCC-PED Detector Concepts

update September 19

Felix Sefkow,
DESY

Update after second round of discussions with
Mogens, Marc-André, Patrick, Christophe, Greg, and Srini

Process Timeline

And Milestones

Soon: Send out **Calls for Expressions of Interest** (Sub-detectors, Detector Concepts)

- drafts already well advances, along the lines discussed in July

Simultaneously: open a **web page** for interested parties to sign up, declaring intent to prepare an EOI

  - to foster cooperation between groups and facilitate common EoIs
  - soft **deadline mid November**

Satellite **meeting** to FCC Physics Workshop (**Jan 17**)

- short presentations on upcoming EoIs

Deadline Jan 31 for submission to **PED**

- for editorial feedback and inclusion in combined FCC submission summary

Deadline Mar 31 for submission to **ESU**

- submission of executive summary and attached EoIs (optional)

Sub-detector EoIs

We invite EoIs of consortia focussing on a given sub-detector

- e.g. vertex detector, drift chamber, ECAL, HCAL, muon instrumentation
- focus on one or few technologies: e.g. silicon ECAL
- international in principle

Link to DRDs

- technological R&D done in DRDs, connection should be explained

Added value:

- system integration aspects: the “last mile”
- system performance evaluation and optimisation
- system design and performance feedback and guidance to DRDs

Link to Detector Concepts

- for calorimeters unique
- for trackers: ideally keep pick & play capabilities, but of course needs a working model for guidance
- simulation and engineering links should be explained

New technologies are welcome

- e.g. straw tracker, TPC, Grainita-based calorimeter system,…
- should be motivated with reference to performance requirements and by technological considerations

Detector Concepts

In a Nutshell

Detector concepts form the link between performance requirements and technological capabilities

- thus **guide the R&D** and give **feedback on performance** impact of technical solutions

Two main ingredients:

- a full **simulation** model
  - enable validation of single particle performance with prototypes
  - realistic prediction of full-event performance: will also need higher-level reconstruction tools
- overall **engineering**
  - to act and respond in the design of the MDI
  - to guide the optimisation of the global structure and parameters

Collaboration forming at a later stage

- maintain freedom to combine, e.g. tracking and calorimeter technologies (“plug & play”)

Detector R&D is organised and funded through the DRD Collaborations

- avoid duplication, join forces - and corresponds to plug & play approach

Detector Concept EoIs

We invite EoIs of consortia focussing on a given Detector Concept

- overall engineering and engineering-informed integrated simulation model
  - realistic materials and dead spaces
- full-event reconstruction and optimisation of full-event performance
  - e.g. di-jet mass resolution, flavour tagging, tau ID

Software integration into Key4HEP eco-system

- reinforce software effort, provide environment for integration studies
- interface to physics studies and sub-detector efforts

No invitation to proto-collaboration forming at this stage

- activities should remain or be fully embedded in PED structure

New concepts are welcome

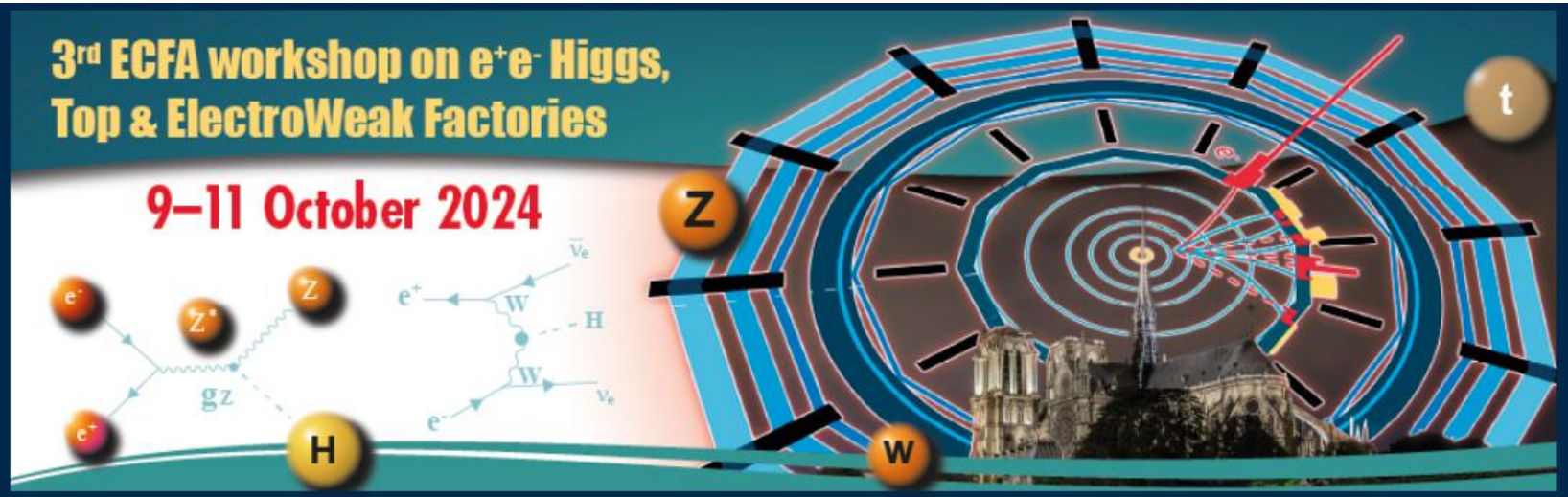
- but should be more than just variants of the existing - in which case efforts should be joint
- variants should be **motivated** with reference to performance requirements and benchmarks

Préparation EAP

Input des labos: realisations et evolution des équipes

Demandes:

Status des EoI



9–11 Oct 2024

Campus des Cordeliers, Paris, Metro Odeon

Europe/Paris timezone

Enter your search term

- Overview
- Committees
- Timetable
- Registration
- Participant List
- **Payment of Registration fee**

Payment of Registration fee

The registration fees are:

- ✔ **Standard** registration (Payment until **July 31st**): **300 EUR**
- ✔ **Student, or Postdoc with a poster** registration: **200 EUR**
- ✔ **Late** registration (Payment in **August or September**): **400 EUR**

Very late registrants (Payment in October) may not have a guaranteed seat at the banquet.

215 PARTICIPANTS, 205 HAVE ALREADY PAID

Aide IT de l'APC, de l'IJCLab et du LLR: Sarodia Vydelingum, Luc Petizon , Sylvaine Pieyre

Conference center Greg/Luc
Coffee & Lunch breaks, Banquet Giovanni/Greg/Sarodia

Welcome cocktail Greg/Luc/Sarodia (merged with Wine & Cheese/posters ?)
proposition de catégories et de prix meilleurs posters, 4 à 5 prix, budget total 500E: Jean-Baptiste, Fares, Luc, Suzanne
Poster: Nicolas/Luc
Web Site Greg/Giovanni/Nicolas/Catherine/Ziad
Wifi Giovanni/Nicolas/Vincent+etudiants
Photo de groupe Nicolas/Sarodia/Sylvaine

Publicité Nationale pour les inscriptions et les posters: Fares, Vincent, Gaelle, Jean-Baptiste
Publicité Internationale pour les inscriptions et les posters: Paul, Marco, Stephane, Maxim

Conference fees/budget Greg/Giovanni/Sarodia
IN2P3/IRFU support Greg / Paul / Maxim avec responsables IN2P3 et IRFU
Support du CERN: Greg/Giovanni
Lab support All Lab Reps (en cas de dépassement, on le répartira entre tous les labos)

Recherche de Sponsors: Paul, Maxim, Suzanne

communication;
Public event Sylvaine, Sarodia, Suzanne, Vincent, Greg, Gaelle, Giovanni, Nicolas, Catherine

Public event

Event sur le modèle de l'evt public du CERN du 24 avril

Support de publicité/photo/reseau sociaux par la cellule
De communication de FCC
(**Mattis Nil Madiane Kennouche**

Poster, site indico independants
Invitation de référents

Introduction *GB*

Explorer l'inconnu
Christophe Grojean (Physicien théoricien, DESY, Université Humboldt de Berlin et scientifique au CERN)

Étude de faisabilité du FCC : Où en sommes-nous ? Impacts sociétaux ?
Johannes Gutleber (Coordinateur du projet FCC Innovation Study)

Table ronde: CG + JG + Gaelle, Giovanni, Nicolas, Vincent; *Suzanne et Greg dans la salle avec les micros*

Science et Société: Faisabilité du FCC, le Futur Collisionneur Circulaire de particules élémentaires du CERN

8 octobre 2024
Campus des Cordeliers, Paris, Metro Odeon

Entrer le texte à rechercher

- Accueil
- Ordre du jour
- Inscription

Contact

gregorio@in2p3.fr
swydolinguin@lapc.in2p...

Réunion d'information sur la faisabilité du FCC, le Futur Collisionneur Circulaire au CERN.

Suite à la recommandation formulée lors de la mise à jour de 2020 de la stratégie européenne pour la physique des particules, le CERN a reçu le mandat, par ses États membres, d'étudier la faisabilité d'un Futur collisionneur circulaire ou FCC.

Le FCC serait un collisionneur de nouvelle génération installé dans un tunnel souterrain de 91 km qui serait creusé à environ 200 m de profondeur sous les départements de l'Ain et la Haute-Savoie en France, et le canton de Genève, en Suisse. Le FCC succéderait au LHC dont le programme de recherche s'achèvera au début des années 2040

L'étude de faisabilité du FCC, lancée en 2021 se poursuivra jusqu'en 2025. Elle comporte plusieurs volets : scientifique, technique, mais aussi administratif et financier, et suppose de nombreux échanges sur le plan de la faisabilité territoriale. Une décision des états membres du CERN sur la réalisation d'un tel projet est attendue vers 2027-2028.

Suite au rapport à mi-parcours de l'étude de faisabilité du FCC qui a été présenté au Conseil du CERN début 2024, le CERN et les pays hôtes organisent des sessions publiques pour donner l'opportunité au grand-public de rester informé des avancements de ces études et d'échanger avec la collaboration FCC sur les implications scientifiques, techniques, mais aussi sociétales de ce projet.

Cette réunion d'information et d'échange, prévue le 8 octobre 2024 au Campus des Cordeliers à Paris, est ouverte à toutes et à tous, avec une session de questions-réponses à la fin des interventions.

L'inscription est gratuite, mais nécessaire pour s'assurer une place dans l'amphithéatre Faraboeuf du campus des Cordeliers.

cnrs NUCLÉAIRE & PARTICULES · cea irfu · APC · IJCLab Irène Joliot-Curie · Université Paris Cité · université PARIS-SACLAY · CERN

Séminaire d'information sur la faisabilité du FCC, le Futur Collisionneur Circulaire au CERN.

Lors de la dernière stratégie européenne pour le futur de la physique des particules élémentaires, le CERN a reçu le mandat, par ses États membres, d'étudier la faisabilité d'un Futur collisionneur circulaire ou FCC. Le FCC serait un collisionneur de particules de nouvelle génération installé dans un tunnel souterrain de 91 km qui serait creusé en profondeur sous les départements de l'Ain et de la Haute-Savoie en France, ainsi que le canton de Genève, en Suisse. Le FCC succéderait au Grand Collisionneur de Hadrons (LHC) dont le programme de recherche s'achèvera au début des années 2040.

L'étude de faisabilité du FCC, lancée en 2021 se poursuivra jusqu'en 2025. Elle s'interesse aux aspects scientifiques et techniques, mais aussi administratifs et financiers. Elle implique aussi de nombreux échanges sur le plan de la faisabilité territoriale. Une décision des États membres du CERN sur la réalisation d'un tel projet est attendue vers 2027-2028.

En avant-première du troisième atelier du Comité Européen pour les Accélérateurs du Futur (ECFA) qui se déroulera à Paris du 9 au 11 octobre 2024, les équipes FCC du CNRS, du CEA et du CERN organisent un séminaire donnant l'opportunité au grand-public de rester informé des avancements de ces études et d'échanger avec la collaboration FCC sur les implications scientifiques, techniques, mais aussi sociétales de ce projet.

Ce séminaire d'information et d'échange aura lieu le 8 octobre 2024 à partir de 18h45 au Campus des Cordeliers à Paris. Il est ouvert à toutes et à tous, avec une session de questions-réponses à la fin des interventions.

L'inscription est gratuite, mais nécessaire pour accéder à l'amphithéatre Faraboeuf du campus des Cordeliers, 15 rue de l'école de médecine (ouverture des portes à 18H30).

Voici le premier film par lequel on pourrait commencer
https://www.youtube.com/watch?v=ug4CajKnGKA

Ensuite le film suivant, coupé en 2, la 1ere moitié entre talk1 et 2, la 2eme entre talk 2 et 3
Car il y a 2 parties bien differentes dans ce film
https://videos.cern.ch/record/2299929

ZOOM / RECORDING ?

18:45	→ 19:00	court-metrage sur le CERN et FCC	15m
19:00	→ 19:15	Contexte et Introduction au Futur Collisionneur Circulaire de particules élémentaires du CERN Orateur: Gregorio Bernardi (Physicien experimentateur, co-responsable FCC-France) (CNRS / IN2P3)	15m
19:20	→ 19:40	Objectifs Scientifiques du FCC : Explorer l'inconnu Orateur: Christophe Grojean (Physicien théoricien, co-responsable FCC-Physique-Experience-Détecteur)) (DESY / CERN)	20m
19:45	→ 20:05	Étude de faisabilité FCC : Où en sommes-nous sur le terrain ? Orateur: Johannes Gutleber (Coordinateur du Projet FCC Innovation study) (CERN)	20m
20:10	→ 21:00	Table Ronde avec le public : Questions - Reponses avec des physiciens du projet FCC Orateurs: Christophe Grojean (DESY (Hamburg) & Humboldt University (Berlin)), Gaelle Boudoul (IP2I/AICP (CNRS/IN2P3)), Giovanni Marchiori (APC Paris), Gregorio BERNARDI (APC Paris, CNRS/IN2P3), Johannes Gutleber (Coordinateur du Projet FCC Innovation study) (CERN), Nicolas Morange (IJCLab), Suzanne GASCON-SHOTKIN (IPN Lyon/Universite Claude Bernard Lyon 1), Vincent BOUDRY (LLR - CNRS, École polytechnique/IPP Paris)	50m