

# Welcome from the Local Organizing Committee

- ✓ Gregorio Bernardi (CNRS/IN2P3, Chair)
- ✓ Catherine Biscarat (L2IT Toulouse)
- ✓ Gaelle Boudoul (IP2I Lyon, AICP)
- ✓ Vincent Boudry (LLR Palaiseau)
- ✓ Paul Colas (IRFU, CEA/Saclay)
- ✓ Marco Delmastro (LAPP Annecy)
- ✓ Jean-Baptiste De Vivie (LPSC Grenoble)
- ✓ Fares Djama (CPPM Marseille)
- ✓ Ziad El Bitar (IPHC Strasbourg)
- ✓ Giovanni Marchiori (APC Paris, co-Chair)
- ✓ Stéphane Monteil (LPC Clermont-Ferrand)
- ✓ Nicolas Morange (IJCLab Orsay, co-Chair)
- ✓ Luc Poggioli (LPNHE Paris)
- ✓ Suzanne Gascon-Shotkin (IP2I Lyon)
- ✓ Maxim Titov (IRFU, CEA/Saclay)

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

9–11 October 2024

Sorbonne Université, Campus des Cordeliers, Paris



## International Advisory Committee

- Patricia Conde Muino (OST/UP)
- Didier Conrard (IM2PG)
- Mogens Dam (Copenhagen NBI)
- Arnoud Ferrari (Stockholm)
- Juan Fuster (Valencia)
- Edam Gross (Tel Aviv)
- Jorgen D'Hondt (VUB Brussels)
- Christophe Grosseau (DESY)
- Patrick Janot (CERN)
- Marc Klein (Liverpool)
- Christos Leontopoulos (Edinburgh)
- Celso Martinez Rivera (Madrid)
- Joachim Nacht (CERN)
- Alessandro Nisati (ROME 0)
- Anton Robinson (Skagway)
- Frank Simon (KIT)
- Paris Sphicas (Athens, CERN, Chair)
- Stefan Stappas (CERN)
- Roberto Tenchini (Pisa)
- Guy Wilkinson (Oxford)
- Andrea Wolter (Louvain)

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- Gaëlle Boudoul (IP2I Lyon, ACP)
- Vincent Bouvier (ILR Palaiseau)
- Paul Colas (RPD, CEA/Saclay)
- Marco Delmasno (JAPP Annecy)
- Jean-Baptiste De Vries (IPSC Grenoble)
- Fares Djano (CFPPM Marseille)
- Ziad El Bim (IFIC Strasbourg)
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- Stéphane Monteil (LPC Clermont-Ferrand)
- Nicolas Morange (JILab Drouot, co-Chair)
- Luc Poggiani (LPMHE Paris)
- Suzanne Gosson-Shorkin (IP2I Lyon)
- Maxime Tross (RPD, CEA/Saclay)

<https://indico.in2p3.fr/e/ecfa2024>

# ECFA Early Career Researchers' Workshop | France

<https://indico.in2p3.fr/event/33447>

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Welcome		Bruno Alves, Guillaume PIETRZYK, Louis Porta
Amphi Pierre-Gilles de Gennes, APC	14:00 - 14:10	
ECFA goals & structure		Gregorio BERNARDI
Amphi Pierre-Gilles de Gennes, APC	14:10 - 14:30	
Overview of detector R&D		Didier Conrard
Amphi Pierre-Gilles de Gennes, APC	14:30 - 15:00	
Physics landscape at future colliders		Stephane Monteil
Amphi Pierre-Gilles de Gennes, APC	15:00 - 15:30	
Coffee break		
Amphi Pierre-Gilles de Gennes, APC	15:30 - 15:45	
QCD & Lund Jet Plane studies at FCC-ee		Lata Panwar et al.
Amphi Pierre-Gilles de Gennes, APC	15:45 - 16:00	
Proposal for the DMAPS Upgrade of the Belle II Vertex Detector		Roua Boudagga et al.
Amphi Pierre-Gilles de Gennes, APC	16:00 - 16:15	
Flavours (and opportunities) at FCC-ee		Lars Röhrig
Amphi Pierre-Gilles de Gennes, APC	16:15 - 16:30	
ALLEGRO ECAL cross-talk emulation and measurement of the Higgs boson width at FCC-ee		Zhibo Wu
Amphi Pierre-Gilles de Gennes, APC	16:30 - 16:45	
SDHCAL evolution : Recent developments and algorithmic improvements for the APRIL Particle Flow		Tanguy PASQUIER
A novel grain calorimeter: GRAiNITA		Yingrui Hou et al.
Amphi Pierre-Gilles de Gennes, APC	17:00 - 17:15	
Open discussion		

<https://indico.in2p3.fr/event/33813/>



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



## Reminder of 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.*
- Goal: update contribution sent to Snowmass exercise and write up in an ECFA Report (White Paper or CERN Yellow Report) by Dec 2025.
  - Editors: A. Robson and C. Leonidopoulos
- New plan, given ESPP timescale:
  - Finalize the work until ~end 2024; compiling Report: Oct 2024-Jan 2025.
  - Submit ECFA HET Factory Report to ESPP update process: end March 2025

## Working Groups:

- WG 1, Physics Potential: Jorge de Blas (Univ. Granada), Patrick Koppenburg (Nikhef), Jenny List (DESY) and Fabio Maltoni (UC Louvain / Bologna)
- WG 2, Physics Analysis Methods: Patrizia Azzi (INFN-Padova / CERN), Fulvio Piccinini (INFN Pavia) and Dirk Zerwas (IJCLab/DMLab)
- WG 3: Detector R&D: Mary Cruz Fouz (CIEMAT Madrid), Giovanni Marchiori (APC Paris) and Felix Sefkow (DESY)

# Committees

The **Program Committee** consists of ex-officio members (ECFA and local chair/secretary) and the WG conveners:

- ✓ WG1: Jorge de Blas (U. Granada), Patrick Koppenburg (Nikhef), Jenny List (DESY / CERN), Fabio Maltoni (UC Louvain / Bologna)
- ✓ WG2: Patrizia Azzi (INFN-Padova / CERN), Fulvio Piccinini (INFN Pavia), Dirk Zerwas (IJCLab/DMLab)
- ✓ WG3: Mary-Cruz Fouz (CIEMAT), Giovanni Marchiori (APC Paris), Felix Sefkow (DESY)
- ✓ ECFA IAC: Christos Leonidopoulos (University of Edinburgh), Aidan Robson (University of Glasgow)

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- ✓ Steinar Stapnes (CERN)
- ✓ Roberto Tenchini (Pisa)
- ✓ Guy Wilkinson (Oxford)
- ✓ Andrea Wulzer (Lausanne)
- ✓ Lidija Zivkovic (Belgrad)



<b>Registration</b>			
<i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> 08:30 - 09:00			
09:00	<b>News from the local organizers</b>		<i>G. Bernardi et al.</i>
<i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i> 09:00 - 09:10			
<b>Welcome from IN2P3 and IRFU</b>		<i>Dr Christelle Roy</i>	
<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>Paris Sphicas</i>	
<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>Margarete Mühlleitner</i>	
10:00	<i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>		09:45 - 10:10
<b>Software for future colliders</b>		<i>Juraj Smiesko</i>	
<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>Overview on low mass sc...</b> <i>Tania Robers</i>	<b>Measurement of hadronic ...</b> <i>Alexis Maloizel</i>	<b>Reimagining Electron-Pos...</b> <i>Graham Wils...</i>
			<b>Design, performance and ...</b> <i>Armin Ilg et al.</i>
	<b>Search for additional Higg...</b> <i>Anne-Marie ...</i>	<b>Strange tagging with ILD f...</b> <i>Dr Taikan Su...</i>	<b>CMOS R&amp;D targeting a ver...</b> <i>auguste bes...</i>
			<b>Precision studies of quan...</b> <i>Juan Alcara...</i>
	<b>Search for invisible decay...</b> <i>Aman Desai</i>	<b>Detector impact on flavou...</b> <i>Andrea Scia...</i>	<b>Probing New Physics at fu...</b> <i>Redamy Per...</i>
			<b>Large area low-power Mo...</b> <i>Yanyan Gao</i>

## 4 rooms:

**Farabeuf** 1: where we stand now

**Pasquier** 2 also called Bilsky Pasquier

**Roussy** 9 use the stairs

**Salle des theses** 6



- Coffee breaks and lunches in the Galleries
- Reception in **Salle Marie Curie** 7 this evening.
- Banquet tomorrow evening (more info by email) at 8PM  
In quartier Montparnasse (18mn by metro, 25mn walk)  
(from Metro Odeon to Vavin by line 4)

# Logistics

- Wifi: Eduroam or ask secretariat for individual login
- Zoom: Possible only in Farabeuf (Plenaries)
- Little power available: concentrate on talks !!!
- Workshop Photo: Thursday at coffee break 10.30

## Poster session



The poster session will start at 18:00 on Wednesday, and will take place during the welcome reception of the event, in the cloister of the Cordelier campus.

The posters will remain displayed until Friday.

Prizes will be awarded to the four best posters, and the first two winners will also be able to present their poster as a short talk during the workshop.

# Special Early Career Researchers Sessions on Thursday

<b>The European Particle Physics Strategy Update and the role of Early-Career Researchers (talk)</b>	<i>Armin Ilg</i>
<i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>	13:15 - 13:30
<b>Who are we? (Interactive)</b>	<i>Emanuela Musumeci</i>
<i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>	13:30 - 13:45
<b>What is Important to us for the future of particle physics in Europe? (discussion)</b>	<i>Emanuela Musumeci</i>
<i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>	13:45 - 14:10

<b>Further topics for ECR White Paper Input? (discussion)</b>	<i>Leonhard Reichenbach</i>
<i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>	18:30 - 18:40
<b>Ranking of topics (Interactive)</b>	<i>Magdalena Vande Voorde</i>
<i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>	18:40 - 18:55
<b>Potential statements (discussion, if time allows)</b>	<i>Armin Ilg</i>
<i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>	18:55 - 19:05
<b>Formation of Working Groups</b>	<i>Armin Ilg</i>
<i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>	19:05 - 19:15
<b>Summary and next steps towards ECR White Paper Input to EPPSU (talk)</b>	
<i>Amphi Farabeuf, Campus des Cordeliers, Paris, Metro Odeon</i>	19:15 - 19:30