

News - Physics Performance, Mar 18, 2024

P. Azzi (INFN – PD), E. Perez (CERN), M. Selvaggi (CERN)

Welcome Michele !

Michele has been appointed co-coordinator of the Physics Performance Work Package at the PED coordination meeting last week.

Please include him in all exchanges pertaining to Physics Performance starting from now.

[Temporarily, Michele will continue as co-convener of the Higgs working group]

Mid-term review report

The Council met on 2 February 2024 to discuss the mid-term report
Unanimous praise, congratulations, thanks to the FCC teams for the excellent work
and the impressive progress

Hugh Montgomery, SPC chair,
Feb 2, 2024

- **The SPC would like to congratulate the FCC Feasibility Study team for successfully producing its Mid-Term Report, which substantially satisfies the designated deliverables specified by Council in 2022.**

Eliezer Rabinovici,
President of the Council,
Feb 2, 2024

In my closing remarks at the end of the Council meeting, I thanked the FCC Feasibility Study team for the very high quality, dedicated work on the midterm review, with which all stakeholders were very impressed. Of course, we are now very much looking forward to seeing the final feasibility report.

Presentation chaired by the DG on Feb 13: <https://indico.cern.ch/event/1379648/>
Talks from Michael Benedikt and Christophe Grojean

Report now available to the FCC community.

See the dedicated “FCC midterm report” community in CDS

<https://new-cds.cern.ch/records/zh1gz-52t41>

Contains both the full report (700 pages) and the Executive Summary (50 pages)

List of contributors of the mid-term review report

Some potential omissions and minor inaccuracies have been reported in the current list of contributors.

If you have contributed to the report, but are not listed among the contributors, it is still possible to fix it:

Registration Link:

Please follow this link: <https://indico.cern.ch/event/1383995/>

The registration process is quick and straightforward.

Existing Authors:

We'll make sure that everyone who is on the original author list is kept in the final list. For further information please check the Indico site

Timeline and Next Steps:

The registration deadline for new contributors is Thursday 28th of March (included).

Should you have any questions or require any clarification, please do not hesitate to reach out to the FCC.secretariat@cern.ch

Completion of the feasibility study

- We may be asked to accelerate the schedule
- Completion of the FS by end of 2025 anyway requires a (good) PED draft by the end of this year. Time is short !
- Content will be based on the MTR (and expanded)
- Structure will change and be similar to that of the CDR

Chapter 1 Physics & Experiments

Chapter 2 FCC-ee collider: Design & Performance

Chapter 3 FCC-hh collider: Design & Performance

Chapter 4 Technical Infrastructure

Chapter 5 Civil Engineering

Chapter 6 Definition of Placement Scenario

Chapter 7 Implementation

Chapter 8 Cost Considerations - Finance Options

+ additional documentation
as FCC notes

- Additional content in the FCC FS final report will include our regular PED deliverables and our response to the SAC/SPC/CRP/FC recommendations (we are going through them with the PED coordinators)
- Little time anyway to go well beyond what we already have. But will try to put more emphasis on the Z, develop further the req. on calorimetry, more FullSim.

Next meetings and (some) events of interest

- Higgs and Top meeting tomorrow (focus on $\sqrt{s} \sim 365$ GeV)
 - <https://indico.cern.ch/event/1390113/>
- FullSim working meeting on Wednesday
 - <https://indico.cern.ch/event/1394192/>
 - NB: bi-weekly working meetings on FullSim, alternating with bi-weekly meetings on analysis framework
- FCC US meeting in MIT, 25-27 March 2024
 - <https://indico.mit.edu/event/876/>
- FCC Week 2024, 10-14 June, San Francisco. Registration open
 - <https://indico.cern.ch/event/1298458/>
- 2nd FCC Italy-France Workshop, Venice, Nov 4-6
 - <https://agenda.infn.it/event/37960/>
- ECFA seminars / workshops of interest :
 - List collected here <https://indico.cern.ch/category/14055/>

Call for speakers

No announcement from the Speakers Buro this time, but :

Profiting of the opportunity to mention here: SIF (Italian Physics Society) abstracts being collected as well (deadline April 22) Contact @patrizia.azzi for more info.

Today's agenda and next meetings

3:00 PM	→ 3:10 PM	News	🕒 10m	✎
		Speakers: Emmanuel Francois Perez (CERN), Michele Selvaggi (CERN), Patrizia Azzi (INFN Padova (IT))		
3:10 PM	→ 3:30 PM	ParticleNet tagger in IDEA	🕒 20m	✎
		Speakers: Dr Andrea Sciandra (Brookhaven National Laboratory (US)), Viviana Cavaliere (Brookhaven National Lab)		
3:30 PM	→ 3:35 PM	Update of the vertexing code	🕒 5m	✎
		Speaker: Franco Bedeschi (Universita & INFN Pisa (IT))		
3:35 PM	→ 3:50 PM	Higgs Yukawa couplings: contribution of Dalitz diagrams	🕒 15m	✎
		Speaker: Michele Selvaggi (CERN)		
3:50 PM	→ 4:00 PM	Status on FullSim	🕒 10m	✎
		Speaker: Brieuc Francois (CERN)		
4:00 PM	→ 4:20 PM	Updates in edm4hep and plans for Monte-Carlo productions	🕒 20m	✎
		Speakers: Jan Eysermans (Massachusetts Inst. of Technology (US)), Juraj Smiesko (CERN)		

Next Physics Performance meeting : Apr 15, t.b.c.