



FUTURE
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News

Juliette Alimena (DESY)

LLPs at FCC-ee Working Meeting

April 4, 2024

Midterm Review Report

- The Council met on February 2, 2024 to discuss the midterm report: Unanimous praise, congratulations, thanks to the FCC teams for the excellent work and the impressive progress
- Report now available to the FCC community. See the dedicated “FCC midterm report” in CDS <https://new-cds.cern.ch/records/zh1gz-52t41>
 - Contains both the full report (700 pages) and the Executive Summary (50 pages)

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.

Sample Deletion

- The Physics and Performance conveners have organized the **deletion of the Spring2021 samples for $\sqrt{s} = 91$ GeV**
- New changes were introduced in the last version of edm4hep that would prevent analysis of the Spring2021 samples
- **If you missed the multiple emails about this, you need to make sure you are subscribed to FCC-PED-FeasibilityStudy@cern.ch !**
- Recommended to use the **Winter2023** samples now. Please consider switching, if you haven't already
- See also <https://indico.cern.ch/event/1392261/#4-updates-in-edm4hep-and-plans>

FCCAnalyses News

- From <https://fccsw-forum.web.cern.ch/t/fccanalyses-v0-9-0/206> :

Dear all,

in preparation for the changes needed for the EDM4hep 1.0, new **release of FCCAnalyses v0.9.0 was created**, which should appear in the stable stack soon and preserves the state before the changes.

Please be aware that in following days incorporation of EDM4hep 1.0 into FCCAnalyses will create breaking changes, meaning master/main branch of FCCAnalyses might not work for your analysis.

Please, let me know if you encounter problems

all the best,
Juraj

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Dear all,

**the latest FCCAnalyses no longer works with samples from winter2023 or spring2021 campaigns.
Pre-compiled FCCAnalysis in stable stack continues to work and will work also in the next stable release.**

If you are compiling your FCCAnalyses you will need to checkout FCCAnalyses tag 0.9.0.
Here is how to do it:

- Please follow <https://fccsw-forum.web.cern.ch/c/fccanalysis/9> to get the latest FCCAnalyses news

Upcoming Events

- **Today:** Talk on IDEA vs CLD design from Mark Larson
- **Next FCC LLP meeting** next week (April 11 at 13h): Talk from John Hayward <https://indico.cern.ch/event/1402140/>
- Next Physics Performance meeting: April 15, TBC
- **ECFA focus topic: LLPs - round table**, April 29, 2024: <https://indico.cern.ch/event/1392179/>
- FCC week, San Francisco, CA (US), June 10-14, 2024 <https://indico.cern.ch/event/1298458/registrations/95765/>
 - Registration open, Abstracts due April 15
- 2nd FCC Italy-France Workshop, Venice, Nov 4-6, 2024
 - <https://agenda.infn.it/event/37960/>
- FCC FullSim meetings: <https://indico.cern.ch/category/16938/>
- FCCAnalyses meetings: <https://indico.cern.ch/category/17971/>
- ECFA seminars/ workshops of interest: <https://indico.cern.ch/category/14055/>

LLP FCC Meetings

- You may have noticed a lull in these meetings after the Annecy workshop
- Please let me know when you would like to present your work, even (especially!) if it is in progress. The aim is to have a working meeting, where all of us working on LLPs at the FCC can discuss physics and even technical issues
- I'll call meetings when people have something to present. Don't be shy!

Backup

Samples in Winter 2023 Campaign (IV)

- **To request a sample to be produced or reproduced in winter2023, we need to contact all of these people:**
 - The MC contact of your physics group: Sarah Williams
 - The group conveners: Giacomo Polesello and Rebeca Gonzalez Suarez
 - Emmanuel Perez and Patrizia Azzi
- LLP sample request in progress here: <https://docs.google.com/spreadsheets/d/1AYxTFRcCy0GNhg9kJLVrFVKbM0VTI7PYGcZjrd6P9wo/edit#gid=71500550>

From Physics Performance: News

How to get the results of the case studies public

- The whole process is still under discussion with PED management, however few basic points here.
- Regular presentations in Physics working meetings are necessary
 - especially in the initial stages, it can be very helpful to make sure the latest tools/datasets etc are being used
- Once the analysis is mature:
 - presentation at Physics Performance meeting
 - a documentation under the form of an internal note
 - presence of the analysis code in the PhysPerf github
- Likely there will be the creation of some “Editorial Board” to follow closely the authors, but in the initial stages these could be the conveners.

FCC-LLP:FCCAnalyses

- Latest “official” version of the HNL analysis code lives in <https://github.com/HEP-FCC/FCCAnalyses>
 - Uses latest “analysis framework” maintained by FCC “central” guys (Clement, Valentin, etc.)
 - Takes Madgraph+Pythia+Delphes samples as input
- We should use <https://github.com/FCC-LLP/FCCAnalyses> to organize our LLP work in FCCAnalyses
 - We all use this new fork as our “upstream” of our forks
 - If you’ve already got the main HEP-FCC repo as an “upstream”, can make this one e.g. “upstreamLLP”
 - We make pull requests (PRs) for all (tested) analysis changes to there, for code we want to preserve/use
 - I keep it in sync with the main FCCAnalyses branch
 - We don’t necessarily make PRs for all of those changes to the main FCCAnalyses
 - I manage this fork, and merge PRs from you all with a fast turnaround
 - Can also add e.g. postdocs as other managers
- Tutorial that makes use of it: <https://github.com/jalimena/LLPFCCTutorial/blob/main/README.md>