

# Higgs/Top Performance meeting

Michele Selvaggi (CERN), Jan Eysermans (MIT)

June 4, 2024

## Feasibility Study Report

- First draft to be ready by the end of the year (for the SPC)
  - Draft v0 for internal PED review by end of September!
    - analysis note drafts ready by early September

## Procedure for conferences

In general, contact us (conveners) in case you would like to present material at a conference

- All abstracts have to be approved by the Higgs/Top conveners and then conference committee
- After approval, the author is responsible for abstract submission to the conference
- Abstracts should be registered in the conf. database: <https://fcc-ee-conference.web.cern.ch/>

## **FCC Week 2024, 10-14 June, San Francisco**

- <https://indico.cern.ch/event/1298458>
- General Higgs overview talk, Higgs/Top properties

## **ICHEP, 18-24 July, Prague**

- <https://indico.cern.ch/event/1291157/>
  - Talk “Higgs physics opportunities at the FCC” (Giovanni Marchiori)
  - Poster on Higgs mass/ZH cross-section of 240+365 GeV (Gregorio B, Ang. L, Kevin D, Jan E.)

## **Higgs Hunting, 23-25 September, Paris**

- <https://indico.ijclab.in2p3.fr/event/10259>
- Looking for a speaker for 12 min talk Higgs @ FCC-ee – please nominate someone or yourself
  - <https://fcc-ee-conference.web.cern.ch/database/conference/981/presentation/1096/>

# Upcoming events



## **Higgs 2024, 4–8 November, Uppsala**

- <https://indico.cern.ch/event/1391236/>
- Looking for abstracts/speakers – please get in touch if you're interested

## **ECFA workshop on EWK factories, 9-11 October, Paris**

- <https://indico.cern.ch/event/1399276/>

## **2nd FCC Italy-France Workshop, 4-6 November, Venice**

- <https://agenda.infn.it/event/37960/>

**Produced large batch of samples at 365 GeV for Top/Higgs studies – thanks Louis Portales!**

Samples are here: [https://fcc-physics-events.web.cern.ch/fcc-physics-events/FCCee/winter2023/Delphisevents\\_IDEA.php](https://fcc-physics-events.web.cern.ch/fcc-physics-events/FCCee/winter2023/Delphisevents_IDEA.php)

- **Higgs samples**

- All samples produced  $Z(XX)H(YY)$  with Whizard @365
- wzp6\_ee\_mumuH\_ecm365 produced with identical seed → being reproduced now
- FCNC Whizard cards debugged but to be produced centrally

- **Top samples**

- WbWb split in hadronic, semileptonic, and leptonic (Whizard)
- Center-of-mass energies 345, 350, 355 and 365 GeV

- **Background samples**

- WW/ZZ Pythia
- $Z/\gamma$  with Whizard – also Pythia under production to have same generator as 240 GeV (p8\_ee\_Zqq\_ecm365)
- Rares

**Let us know if you need additional samples**

# Agenda for today



**14:00** → 14:20 **News**  
Speakers: Jan Eysermans (Massachusetts Inst. of Technology (US)), Michele Selvaggi (CERN)

🕒 20m 

**14:20** → 14:40 **Color Singlet Clustering for fully hadronic final states**  
Speaker: Thibault Gergaud (Centre National de la Recherche Scientifique (FR))

🕒 20m 

**14:40** → 15:00 **Z(vv/jj) H(jj) final states, combination and update at 365 GeV**  
Speaker: George Iakovidis (Brookhaven National Laboratory (US))

🕒 20m 

**15:20** → 15:40 **Higgs fully hadronic couplings with ZH at 240/365 GeV**  
Speaker: Alexis Maloizel (APC, CNRS/IN2P3 and Université Paris Cité (FR))

🕒 20m 

**15:40** → 16:00 **Top threshold scan**  
Speakers: Ankita Mehta (CERN), Matteo Defranchis (CERN)

🕒 20m 