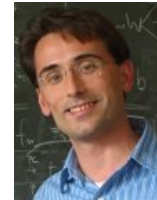


ECFA Higgs/Top/EW Factory WG 1 - Physics Potential



Higgs Top Electroweak

20-22 April 2022



Chris Hays, Karsten Köneke, Fabio Maltoni

ECFA-WHF-WG1-HTE-conveners@cern.ch

ECFA Higgs/Electroweak/Top Factory Workshop Series

Based on the **recommendations of the Update of the European Strategy for Particle Physics**, the **European Committee for Future Accelerators (ECFA)** has decided to organise 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.

To set up the relevant structures and to define a path towards such workshops, an International Advisory Committee (IAC) has been formed. It suggested to establish **three Working Groups**, led by conveners from both experiment and theory:

- [WG 1: Physics Potential](#)
 - Conveners: Juan Alcaraz (CIEMAT - Madrid), Jenny List (DESY), Fabio Maltoni (UC Louvain / Bologna) and Jorge de Blas (Univ. Granada)
- **WG 2: Physics Analysis Methods**
 - Conveners: Patrizia Azzi (INFN-Padova / CERN), Fulvio Piccinini (INFN Pavia) and Dirk Zerwas (IJCLab/DMLab)
- **WG 3: Detector R&D**
 - Starting off, as [Detector R&D Roadmap documents](#) are finished now ([Synopsis](#) and [Full Document\(10.17181/CERN.XDPL.W2EX\)](#))

[Informational Kick-off Meeting](#) was held online on Friday 18th June 2021.

Time frame: March 2021 – ~December 2023

Top-level indico page: <https://indico.cern.ch/event/1044297/>

Working Group 1 - Physics Potential

WG 1 activities ([indico](#)) and organization ([twiki](#)):

Subgroups:

- **WG1-PREC (Precision in theory & experiment):**
 - Conveners: Ayres Freitas (Pittsburgh), Paolo Azzurri (Pisa), Adrian Irlles (Valencia), Andreas Meyer (DESY)
ecfa-whf-wg1-prec-conveners @cern.ch
- **WG1-GLOB (Global interpretations in (SM)EFT and UV complete models):**
 - Conveners: Sven Heinemeyer (IFCA/IFT), Alexander Grohsjean (DESY), Junping Tian (Tokyo), Marcel Vos (Valencia), Jorge de Blas (Granada) ecfa-whf-wg1-glob-conveners @cern.ch
- **WG1-HTE (HIGGS-TOP-EW and connection with (HL-)LHC):**
 - Conveners: Chris Hays (Oxford), Karsten Koeneke (Freiburg), Fabio Maltoni (Louvain)
ecfa-whf-wg1-hte-conveners @cern.ch
- **WG1-FLAV (Heavy Flavours):**
 - Conveners: David Marzocca (Trieste), Stephane Monteil (Clermont Ferrand), Pablo Goldenzweig (KIT)
ecfa-whf-wg1-flav-conveners @cern.ch
- **WG1-SRCH (Feebly interacting particles, direct low mass searches):**
 - Conveners: Roberto Franceschini (Rome III), Rebeca Gonzalez (Uppsala), Filip Zarnecki (Warsaw)
ecfa-whf-wg1-srch-conveners @cern.ch

WG1 Seminar series, workshops, etc, see [this indico](#) category

Higgs-Top-EW and connection with (HL-)LHC subgroup (HTE)

Organization:

- Group meetings: WG1-HTE
- egroup [mailing list](#)
 - You can also subscribe to the egroups of the groups; just search in egroups for “ECFA-WHF-WG1”.
- Conveners: Chris Hays (Oxford), Karsten Köneke (Freiburg), Fabio Maltoni (Louvain)
- Convener's email: [ecfa-whf-wg1-hte-conveners @cern.ch](mailto:ecfa-whf-wg1-hte-conveners@cern.ch)
 - **Please don't hesitate to talk to us for any ideas, suggestions, questions!**

Mandate:

- Identify measurements that the (HL-)LHC can perform in order to increase the physics potential of a future Higgs/Top/EW Factory.
 - High-precision inclusive measurements
 - Differential measurements, e.g., at high p_T
 - ...
- The physics potential of an e^+e^- HTE factory will also be compared to the potential of other future colliders.

You can find all our events, meetings, and workshops in our [indico category](#).

Goals for this workshop

- Get the community together
- Reports from each of the relevant Snowmass activities
 - So that we can pick where they are leaving things (more or less)
- Start identifying what needs to be done where
- Looking for updates and new ideas
- ... and lots of time for fruitful discussions!

Way forward

2022 ECFA e+e- Workshop in Hamburg

5 – 7 October 2022: <https://indico.desy.de/event/33640/>

- Status of Working Group activities
- Discussions of future plans
- Interactions between theory and experiments
- ...
- Parallel and plenary sessions
- Pre-meeting (CLIC, ILC, FCC,...) on Tuesday before the workshop planned

For WG1 HTE group:

- After our first workshop this week: several topical meetings to prepare for Hamburg workshop

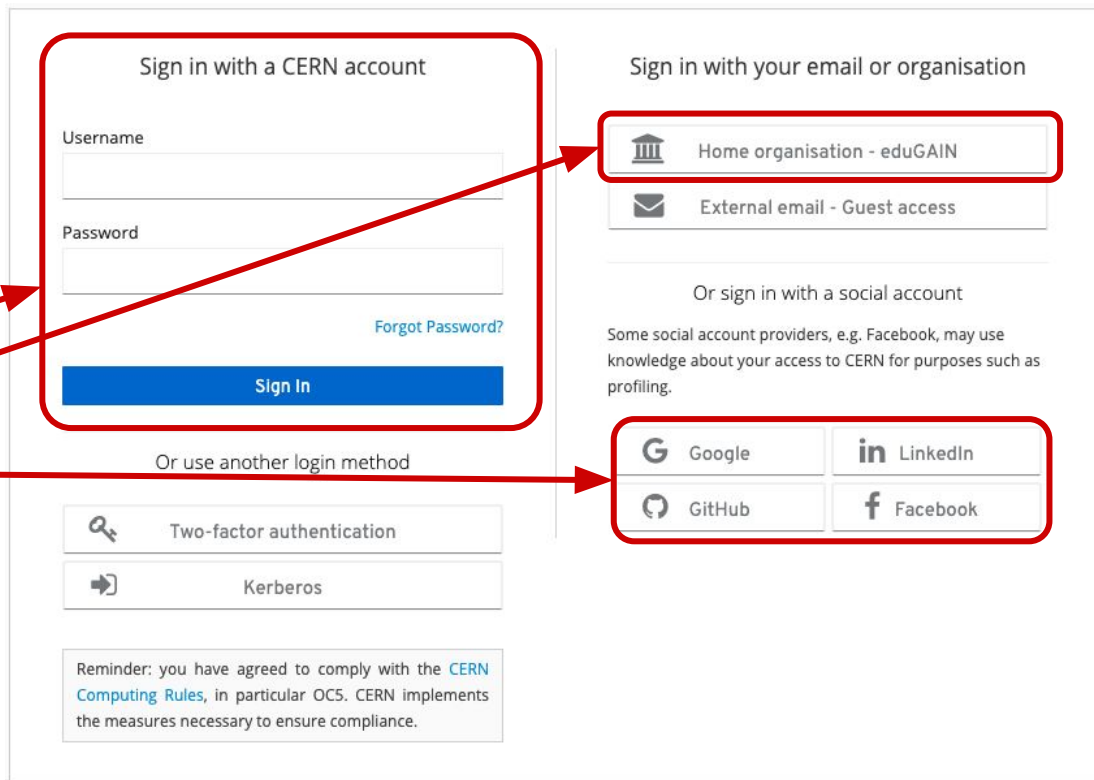


We will use mattermost for online and offline discussions.

Created new ECFA-WHF-WG1 team. [Invitation link](#) (also sent via email to all participants)

- Use your **CERN login**, your **own institute login**, or **social media login**.

After registration to the team, join our public **HiggsTopEW channel** with [this link](#) (or search for the channel in the team)



The screenshot shows the Mattermost login interface. A red box highlights the "Sign in with a CERN account" section, which includes fields for "Username" and "Password", a "Forgot Password?" link, and a blue "Sign in" button. A red arrow points from the "CERN login" text in the list to this section. Another red box highlights the "Sign in with your email or organisation" section, which includes "Home organisation - eduGAIN" and "External email - Guest access" options. A red arrow points from the "own institute login" text in the list to this section. A third red box highlights the "Or sign in with a social account" section, which includes "Google", "GitHub", "LinkedIn", and "Facebook" options. A red arrow points from the "social media login" text in the list to this section. Below these sections, there are options for "Two-factor authentication" and "Kerberos". At the bottom, a reminder states: "Reminder: you have agreed to comply with the [CERN Computing Rules](#), in particular OCS. CERN implements the measures necessary to ensure compliance."

When answering/commenting on a specific post, please use the “**reply to**” option that appears on the top right of the post after hovering with the mouse.



WiFi Network

Follow instructions on: <https://information-technology.web.cern.ch/help/visitors>

Use “**eduroam**” network (*provided by your home institution*) or “**CERN-Visitors**” network

If you have CERN computing account, register your laptop <http://cern.ch/register>

Visitors

Your main priorities are network connection and printing.

Network connection for your laptop

Please connect your device to the “CERN-Visitors” Wi-Fi network.

You should be redirected to the “CERN Visitor Wi-Fi” registration portal. If not automatically redirected (as this is device dependant), open a web browser and you will see the registration portal.

Via this portal, without any registration, you will have access to a limited number of publicly available CERN websites (“Public Links”). To get a full internet access, agree with the CERN computing rules and register for Internet access by providing you email and a mobile phone number to which an access code will be sent by SMS. Once registered, you will be able to access remote web sites (http and https) and some other services (e-mail, VPN, SSH).

Note that this “CERN-Visitor” service is linked with the Wi-Fi Service Enhancement project, and may not be available in all buildings. More details can be found [here \(https://cern.ch/wifi-wise#Visitors\)](https://cern.ch/wifi-wise#Visitors).

If you have eduroam account provided by your home institute, you can use this network to gain connectivity. To get a full internet access, choose eduroam network, agree with the CERN computing rules and follow displayed instructions.

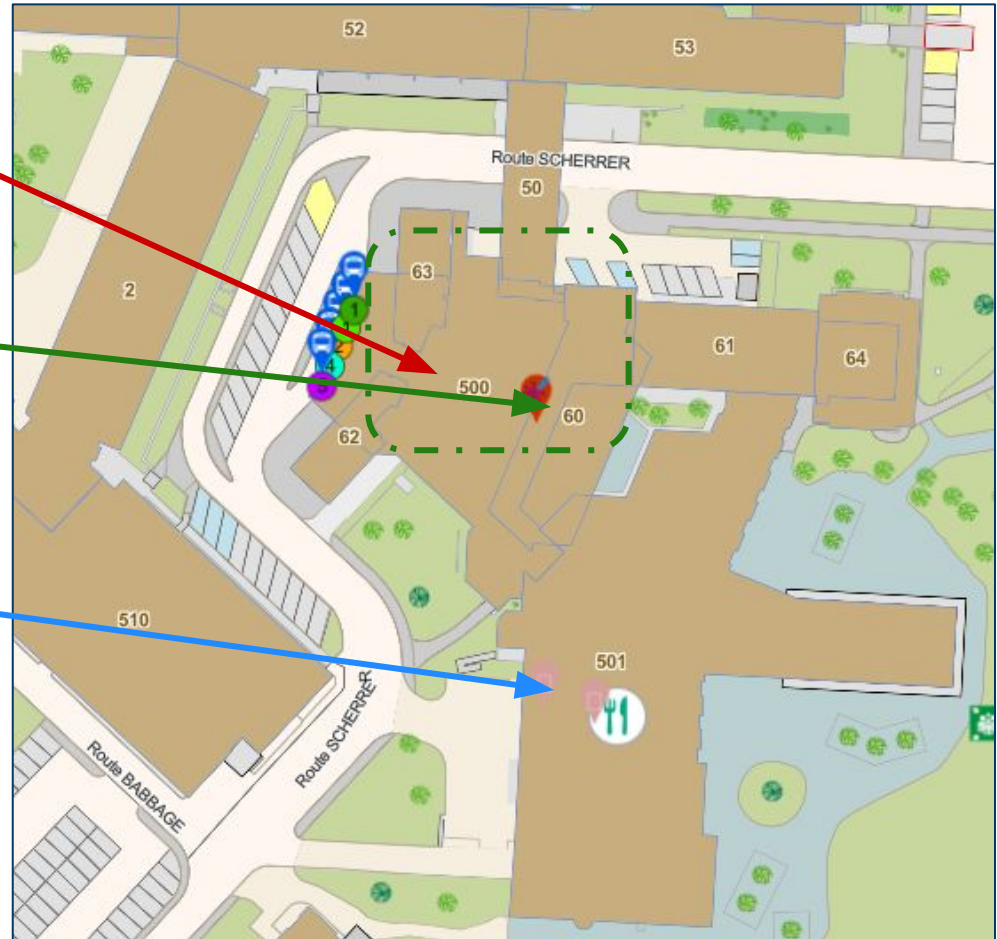
In some places, CERN-Visitors SSID is not yet available. In such areas (if you don't have eduroam account provided by your home institute), you can register your laptop and connect to the CERN network on a temporary basis.

Venue & Coffee Breaks

Venue: **Main Auditorium**
([CERN map](#))

Coffee breaks: “**Mezzanine**”
just outside

[CERN Restaurant 1](#) (“R1”):
Opening hours: 6:30-22:00



Informal Workshop Dinner

- Thursday evening, within 20 minutes or so walking distance from here
 - **Meet in front of the Main Auditorium at 19:00**, then walk together to the restaurant
 - **19:30 at the restaurant** (likely an Italian place in Meyrin)
 -

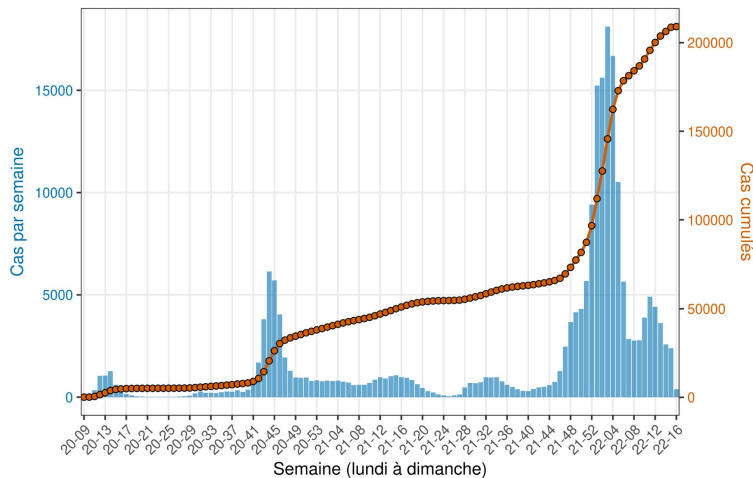
If you would like to join the dinner, **please fill out [this doodle](#) no later than Thursday noon**, such that we can call to make the reservation.

Covid-19 at CERN and in the local area

Geneva area

Nouveaux cas par semaine

Pour la période du 26.02.2020 au 20.04.2022,
canton de Genève.



The virus is still circulating!

- Please stay safe
(keep distance, hand sanitisers, ...)
- Half capacity in all meeting rooms:
Respect seat configuration
- Masks not mandatory but please feel free to wear one

Cases at CERN show similar trend as in Geneva.

CERN COVID information:

- COVID test can be booked via [PLAMED](#)
- If you have symptoms, declare yourself on [TRAMED](#)
- If you do not have a CERN account, contact [COVID helpline](#) (& inform organisers)

COVID measures in [Switzerland](#) and in [France](#)

We wish you an interesting workshop!



Group of volunteers collecting aid for Ukraine.
Donation box at desk in front; also paypal or wire transfer possible.
More information at aidforall.ch



Aid for All