

Table of Contents

Overview.....	1
Mailing Lists.....	2
Meetings.....	3
Organisation.....	4
Steering Committee.....	4
Working Groups.....	4
WG1 (Higgs cross-section and branching ratios).....	4
WG2 (Higgs properties).....	5
WG3 (BSM Higgs).....	6
WG4 (HH and multi-Higgs).....	6
Contacts for activities outside the Higgs Working Group.....	7
Theory Advisory Committee.....	7
Useful information.....	8
Approval process.....	8
Gitlab, SVN and CDS.....	8
Higgs cross sections and decay branching ratios.....	8
Documentation.....	8
CERN Reports: Handbook of LHC Higgs Cross Sections.....	8
Publishing LHCHWG public material to SciPost "Physics Community Reports".....	8
Practical information.....	9
How to get a CERN account.....	9
Mattermost channels.....	9
Workshops.....	10

Overview

The LHC Higgs Working Group (LHCHWG) provides recommendations on theoretical predictions and methodologies on Higgs boson(s) studies to the experiments for both current and planned LHC runs. More general aspects related to non-Higgs-boson(s)-specific subjects, like global Effective Field Theories or Dark Matter model studies are pursued by the LHCHWG in collaboration with other more general efforts of the LHC community.

Show me more about the history of the LHCHWG [Hide](#)

The LHC Higgs Working Group was created in January 2010 under the name "LHC Higgs Cross Section Working Group." Its aim was to produce agreements within the LHC community on cross sections, branching ratios and pseudo-observables relevant to SM and MSSM Higgs boson(s).

In spring 2012, the group was restructured and new subgroups were added with the goal of discussing Higgs properties and measurements, as well as BSM extensions. A further restructuring took place in 2014, when the TAC (Theory Advisory Committee) was added to the organization, and an agreement was made with CERN for local support. The TAC always includes one permanent member of the CERN theory group. The activities of the group are supervised by the Steering Committee (SC) that includes two representatives from each experiment and four representatives from the theory community. The SC members from ATLAS or CMS are appointed by each experiment after their internal selection procedures. The SC members from the theory community are appointed by the TAC, in coordination with the SC.

Over time, the focus of the working group has widened substantially, so that in November 2020, the majority of its members decided to adjust the name to "LHC Higgs Working Group".

Four CERN Yellow Reports have been completed:

- "Inclusive Observables" (CERN-2011- 002 [↗](#))
- "Differential Distributions" (CERN-2012-002 [↗](#))
- "Higgs Properties" (CERN-2013-004 [↗](#))
- "Deciphering the Nature of the Higgs Sector" (CERN-2017-002 [↗](#))

These achievements facilitated the comparison and combination of Higgs results at LHC since the beginning of the LHC physics programme.

The group is organised into four working groups:

- WG1: Higgs cross-sections and branching ratios
- WG2: Higgs properties
- WG3: BSM Higgs
- WG4: HH and multi-Higgs

If you want to join the working group, please send an e-mail to working group conveners listed below. Please subscribe to the relevant mailing lists of the group. Several activities are of interest to (or rely on expertise from) multiple groups and as such are covered as cross-WG efforts.

Mailing Lists

All members of the working group should subscribe to the general mailing list and the mailing lists for any working groups (and subgroups) they are planning to contribute to.

- **General mailing list**
 - ◆ `lhchiggs@SPAMNOTcernNOSPAMPLEASE.ch`
 - ◆ Use for common issues, e.g. announcement of group meetings etc.
 - ◆ Archived messages [↗](#)
 - **Event announcements**
 - ◆ `lhchiggs-announcements@SPAMNOTcernNOSPAMPLEASE.ch`
 - ◆ For Higgs-related announcements not directly related to the WG activities, like conferences, programs, etc.
 - ◆ Every member of the Higgs working group is welcome to (responsibly) use this list.
 - ◆ Archived messages [↗](#)
 - **Mailing lists for each working group (and subgroups) are listed in the Organisation section.**
 - How to subscribe to mailing lists
 - Posting messages to any `lhchiggs-xxx` list is restricted to members of the `lhchiggs` egroup, i.e. you need to use your e-mail account registered to `lhchiggs` mailing list.
 - Remove "SPAMNOT" from mailing address when sending.
 - Any new mailing lists should have the prefix "`lhchiggs-`". Any TWiki page Topic name should have the prefix "`LHCHWG`" and should be created under "`LHCHWG`" Topic parent.
-

Meetings

- Indico category [🔗](#)
 - Meeting summaries can be browsed from this page [🔗](#).
 - The SC weekly meeting takes place every Monday 10:00-11:00. Please avoid organising meetings during this time slot if possible.
 - Please make sure to take into account timezone constraints of participants in order to facilitate participation from all regions. Early afternoon in Europe is generally a good compromise to allow participants from Asia and the Americas to connect.
-

Organisation

A record of the previous WG convenors and members of the steering committee is being compiled in this spreadsheet[?]. Anyone with historical knowledge of the WG is encouraged to add missing names.

Steering Committee



- Steering committee mailing list:
lhc-higgs-steering-committee@SPAMNOTcernNOSPAMPLEASE.ch.

Steering committee members			
ATLAS	Katharine Leney	SMU	10/2022
	Tatsuya Masubuchi	Tokyo	10/2023
CMS	Mauro Donega	ETH	01/2023
	Julie Malcles	Univ. Paris-Saclay	09/2023
Theory	Ennio Salvioni	University of Sussex	12/2023
	Ramona Gröber	University of Padua	12/2023
	Tim Cohen	CERN	01/2023
	Fabrizio Caola	Oxford	01/2021

Working Groups

Mailing list to contact all group and subgroup convenors:

lhc-higgs-all-groups-and-subgroups-conveners@SPAMNOTcernNOSPAMPLEASE.ch

WG1 (Higgs cross-section and branching ratios)



- WG1 TWiki
- WG1 mailing list: lhc-higgs-xsbr@SPAMNOTcernNOSPAMPLEASE.ch
- WG1 convenors mailing list: lhc-higgs-xsbr-convenor@SPAMNOTcernNOSPAMPLEASE.ch
- WG1 meetings in Indico[?]

WG1 convenors			
ATLAS	Hannah Arnold	Nikhef	05/2023
CMS	Alessandro Calandri	ETHZ	07/2023
Theory	Bernhard Mistlberger	SLAC	07/2022
	Alexander Karlberg	CERN	05/2021

WG1 subgroups	Subgroup mailing list	Mail to convenors	ATLAS	CMS	Theory	
ggF	Mailing list	Mail	Robin Hayes, Nikhef (06/2023)	Alessandra Cappati, LLR (10/2023)	Alexander Huss, CERN (09/2022)	Stephen Jones, Durham (06/2021)

WG1 subgroups	Subgroup mailing list	Mail to conveners	ATLAS	CMS	Theory		
VBF	Mailing List	Mail	Jiayi Chen, Simon Fraser (05/2023)	Gaetano Barone, Brown University (09/2021)	Mathieu Pellen, Freiburg (05/2021)	Silvia Ferrario Ravasio, CERN (10/2022)	
VH	Mailing List	Mail	Valerio Dao, CERN/SBU (12/2023)	Suman Chatterjee, HEPHY Vienna (10/2023)	Matthew Lim, Sussex (12/2023)	Giancarlo Ferrera, University of Milan (02/2019)	
ttH/tH	Mailing List	Mail	Josh McFayden, Sussex (01/2021)	Davide Valsecchi, ETH (01/2024)	Malgorzata Worek RWTH Aachen (01/2022)	Marco Zaro, Milan (01/2022)	
Offshell		Mail	Rafael Coelho Lopes de Sa, UMass (04/2022)	Li Yuan, BUAA (10/2023)	Eleni Vryonidou, Manchester (01/2024)	Raoul Roentsch, Milan (09/2019)	
BR		Mail	Daniela Rebutuzzi, Pavia (08/2014)	Ivica Puljak, Split (05/2014)	Michael Spira, PSI (10/2021)	Sven Heinemeyer, IFCA (08/2014)	Alexander Mück, Aachen (08/2014)

Mailing list to contact all WG1 subgroup conveners:

lh-higgs-xsbr-subgroup-convener@SPAMNOTcernNOSPAMPLEASE.ch

WG2 (Higgs properties)



- WG2 TWiki
- WG2 mailing list: lh-higgs-properties@SPAMNOTcernNOSPAMPLEASE.ch
- WG2 conveners mailing list: lh-higgs-properties-convener@SPAMNOTcernNOSPAMPLEASE.ch
- WG2 meetings in Indico [↗](#)

WG2 conveners			
ATLAS	Sarah Heim	DESY	01/2023
CMS	Giacomo Ortona	Torino	12/2022
Theory	Pier Paolo Giardino	IFT Madrid	04/2024
	Daniele Barducci	University and INFN Pisa	02/2022

WG2 subgroups	Subgroup mailing list	Mail to conveners	ATLAS	CMS	Theory
Fiducial, Differential and Template XS	Mailing List	Mail	Jelena Jovicevic, University of Belgrade (12/2023)	Matteo Bonanomi, UHH (10/2022)	Frank Tackmann, DESY (05/2017)

WG3 (BSM Higgs)



- WG3 TWiki
- WG3 mailing list: lhc-higgs-bsm@SPAMNOTcernNOSPAMPLEASE.ch
- WG3 convenors mailing list: lhc-higgs-bsm-convener@SPAMNOTcernNOSPAMPLEASE.ch
- WG3 meetings in Indico [↗](#)

WG3 convenors			
ATLAS	Tatjana Lenz	Bonn	05/2024
CMS	Alexis Kalogeropoulos	Princeton	10/2023
Theory	Brian Shuve	Harvey Mudd	04/2022
	Shufang Su	Arizona	03/2021

WG3 subgroups	Subgroup mailing list	Mail to convenors	ATLAS	CMS	LHCb	Theory		
bbH/bH		Mail	Tim Barklow, SLAC (01/2021)	Chayanit Asawatangkuldee (Chulalongkorn U.) (07/2021)		Michael Spira, PSI (08/2014)	Marius Wiesemann, MPI Munich (09/2014)	
Extended Higgs Sector	Mailing List	Mail	Lidija Zivkovic, Belgrade IP (2019), Nikos Rompotis, Liverpool (01/2021)	Alexandra Carvalho, PKU (01/2024), Khawla Jaffel USTC (03/2024)		Tania Robens, Zagreb (02/2021)	Rui Santos, ISEL/CFTC, Lisbon (2015)	
MSSM		Mail	Timothy Barklow, SLAC (2019)	Afiq Anuar, DESY (07/2021)		Emanuele Bagnaschi, CERN (06/2020)	Michael Spira, PSI (04/2012)	
NMSSM		Mail	Nikos Rompotis, Liverpool	Daniel Winterbottom, Imperial (07/2021)		Ulrich Ellwanger, LPT, Orsay (2015)	Margarete Mühlleitner, KIT	Nausheen Shah, Wayne State (11/2019)
Exotic Higgs Decays		Mail	Verena Martinez, UMass (01/2021)	Fengwangdong Zhang, UC Davis (01/2024)	Carlos Vazquez Sierra, USC	Brian Shuve, Harvey Mudd (01/2020)	Matthias König, TU Munich (01/2020)	

WG4 (HH and multi-Higgs)



- WG4 TWiki

- WG4 mailing list: lhc-higgs-hh@SPAMNOTcernNOSPAMPLEASE.ch
- WG4 convenors mailing list: lhc-higgs-hh-convener@SPAMNOTcernNOSPAMPLEASE.ch
- WG4 meetings in Indico [↗](#)

WG4 convenors			
ATLAS	Stefano Manzoni	CERN	10/2022
CMS	Fabio Monti	CERN	10/2023
Theory	Javier Mazzitelli	PSI	06/2018
	Ludovic Scyboz	Monash	02/2024
	Margarete Muehlleitner	KIT	

Contacts for activities outside the Higgs Working Group

Group TWiki	Group Mailing List	Group email to the contacts	ATLAS	CMS	Theory		
MCNet ↗ (Point of contact)		Mail			Simon Plätzer, Graz (09/2014)		
PDF (Point of contact)		Mail	Joey Huston, Michigan State (01/2010)	Josh Bendavid, CERN	Maria Ubiali, Cambridge	Robert Thorne, UCL (01/2010)	Joey Huston, Michigan State
LHC EFT Working Group ↗ (Contacts)			Sarah Heim, DESY (01/2023)	Giovanni Petrucciani, CERN (10/2020)	Jorge de Blas, Granada (10/2020)		

Theory Advisory Committee

The Theory Advisory Committee (TAC) is responsible for appointing the theory members of the Steering Committee. The TAC will always include one member from the CERN Theory group. From Sept 1st 2023 the members of the TAC are:

- Christophe Grojean, DESY and Humboldt University
- Massimiliano Grazzini, Univ. of Zurich
- Michelangelo Mangano, CERN/LPCC
- Laura Reina, Florida State University
- Jose Santiago, Univ of Granada
- Veronica Sanz, Univ. of Sussex
- Carlos Wagner, Argonne/Univ. of Chicago
- Giulia Zanderighi, MPI Munich

Useful information

Approval process

The approval process for notes, the workflow for producing results in the LHCHWG, and guidelines that should be followed to ensure a correct and efficient work and communication are outlined on this page.

Gitlab, SVN and CDS

Gitlab	LHC H XS WG gitlab ↗	
SVN (deprecated)	SVN Information	WebSVN ↗
CDS	CDS submission instructions	CDS Collection ↗
Yellow Reports	Instruction for CERN Yellow Report	

Higgs cross sections and decay branching ratios

Production cross-sections and decay BRs are detailed on this page, for both SM and BSM Higgs. A selection of the most commonly used plots is also provided.

Documentation

1. LHC Higgs WG Library
2. Link to CDS [↗](#)
3. Generator setups used * **Development only***
4. Particle masses for couplings vs mass plot

CERN Reports: Handbook of LHC Higgs Cross Sections

1. Inclusive Observables (CERN-2011-002 [↗](#), arXiv:1101.0593) [↗](#).
2. Differential Distributions (CERN-2012-002 [↗](#), arXiv:1201.3084) [↗](#).
3. Higgs Properties (CERN-2013-004 [↗](#), arXiv:1307.1347) [↗](#).
 - ◆ BibTeX and LaTeX citation format for CERN-2011-002 (arXiv:1101.0593), CERN-2012-002 (arXiv:1201.3084) and CERN-2013-004 (arXiv:1307.1347).
4. Deciphering the Nature of the Higgs Sector (CERN-2017-002 [↗](#), arXiv:1610.07922) [↗](#).

Publishing LHCHWG public material to SciPost "Physics Community Reports"

To improve the recognition of work done within the LHCHWG, a new branch of SciPost [↗](#) called "Physics Community Reports" has been created. Physics Community Reports is intended to be a place where work that often does not reach the threshold for a publication in a typical journal but still provides important information (e.g. updates of cross-section predictions) can be published. We intend to submit our public notes and yellow reports to this new branch once the internal review is finalized. Refereeing criteria are adapted to the purpose, at least one of the following should be fulfilled (in addition to the general acceptance criteria):

- Provide a novel and synergetic link between different research areas.
- Present a step forward on a previously identified research stumbling block.

- Fill in a gap concerning reference results or benchmarks in a particular research direction, with clear potential for multi-pronged follow-up work.

Further information is available at this link: SciPost "Physics Community Reports" [↗](#).

Practical information

How to get a CERN account

- How to get a CERN Account
- CERN Account [↗](#) |

Mattermost channels

Mattermost team "LHC Higgs WG" and channels are provided for less formal communication and discussions - members of the WG can join the this Mattermost team following this link: LHC Higgs WG team [↗](#).

Each member of this team can join any of the public channels for individual working groups:

- WG1 [↗](#)
 - WG2 [↗](#)
 - WG3 [↗](#)
 - WG4/LHC-HH [↗](#)
-

Workshops

The LHC Higgs Working Group workshop is held annually, usually in November or December.

Show details of previous workshops Hide

The 20th General Assembly Meeting at CERN 2023	Nov. 13-15, 2023	Home page	Agenda	
The 19th General Assembly Meeting at CERN 2022	Nov. 28-30, 2022	Home page	Agenda	
The 18th General Assembly Meeting 2021	Dec. 1-3, 2021	Home page	Agenda	
The 17th General Assembly Meeting virtual-only 2020	Nov. 9-11, 2020	Home page	Agenda	
The 16th General Assembly Meeting at CERN 2019	Oct. 16-18, 2019	Home page	Agenda	
The 15th General Assembly Meeting at CERN 2018	Dec. 10-12, 2018	Home page	Agenda	
The 14th General Assembly Meeting at CERN 2018	Mar. 26-27, 2018	Home page	Agenda	
The 13th General Assembly Meeting at CERN 2017	Jul. 13-14, 2017	Home page	Agenda	
The 12th General Assembly Meeting at CERN 2016	Oct. 12-14, 2016	Home page	Agenda	
Preparatory Meeting	July 7-8, 2016	Home page	Agenda	
The 11th General Assembly Meeting at CERN 2016	Jan. 13-15, 2016	Home page	Agenda	
The 10th General Assembly Meeting at CERN 2015	July 15-17, 2015	Home page	Agenda	
The 9th General Assembly Meeting at CERN 2015	January 22-24, 2015	Home page	Agenda	
The 8th General Assembly Meeting at CERN 2014	June 12-13, 2014	Home page	Agenda	Minutes
The 7th Workshop at CERN 2012	Dec. 5-6, 2012	Home page	Agenda	
The 6th Workshop at CERN 2012	May 24-25, 2012	* Home page	Agenda	
The 5th Workshop at LAL 2011	Nov. 21-22, 2011	Home page	Agenda	
The 4th Workshop at BNL 2011	May 4-6, 2011	Home page	Agenda	
The 3rd Workshop at Bari 2010	Nov. 4-5, 2010	Home page	Agenda	
The 2nd Workshop at CERN 2010	Jul. 5-6, 2010	Home page	Agenda	Minutes
Inauguration Workshop in Freiburg 2010	Apr. 12-13, 2010	Home page	Agenda	Minutes

- Higgs_XSBR_YR4_update.xlsx: Higgs_XSBR_YR4_update - revision includes BSM numbers for 13.6 TeV based on interpolation

This topic: LHCPHysics > LHCHWG

Topic revision: r535 - 2024-05-03 - SarahHeim



Copyright &© 2008-2024 by the contributing authors. All material on this collaboration platform is the property of the contributing authors.

or Ideas, requests, problems regarding TWiki? use [Discourse](#) or [Send feedback](#)