The 14th HXSWG general meeting

Massimiliano Grazzini
(on behalf of the Steering Committee)

CERN, march 26-27 2018

Universität Zürich[UZH]

FNSNF
Swiss National Science Foundation

Overview

The HXSWG was created in January 2010

Aim: *"produce agreement 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 property/measurement and BSM extensions.

Four Yellow Reports:

"Inclusive Observables" (CERN-2011- 002, arXiv: 1101.0593)

"Differential Distributions" (CERN-2012-002, arXiv:1201.3084)

"Higgs Properties" (CERN-2013-004, arXiv:1307.1347)

"Deciphering the nature of the Higgs sector" (CERN-2017-002, arXiv:1610.07922)

These achievements paved the way to the interpretation of Higgs results since the beginning of the LHC physics programme.

Our organisation

Steering Committee Members Mail

ATLAS		CMS		THEORY			
Michael Duehrssen (CERN) (2017)	Bill Murray (STFC/Warwick) (2016)	Andrey Korytov (University of Florida) (2016)	Guillelmo Gomez Ceballos (MIT) (2017)	Jose Santiago (Granada) (2017)	Massimiliano Grazzini (Zürich) (2017)	Gino Isidori (Zürich) (2016)	Laura Reina (Florida State U.) (2016)

Replacements to be appointed soon

Working Group Conveners

Group TWiki	Mail to conveners	ATLAS	CMS	THEORY	
Higgs XS&BR	Mail	Paolo Francavilla (INFN-Pisa) (2016)	Roberto Covarelli (Torino) (2016)	John Campbell (FNAL) (2017)	Fabrizio Caola (Durham) (2017)
Higgs Properties	Mail	Chris Hays (Oxford) (2015)	Mingshui Chen (CN) (2016)	David Marzocca (Zürich) (2017)	Francesco Riva (CERN) (2017)
BSM Higgs	Mail	Liron Barak (CERN) (2016)	Roger Wolf (KIT) (2015)	Stefania Gori (Cincinnati) (2016)	Pietro Slavich (LPTHE) (2017)

Theory Advisory Committee

(as from October 1st 2017)

THEORY			
Stefan Dittmaier (Freiburg)	Fabio Maltoni (Louvain)	Michelangelo Mangano (CERN/LPCC)	Carlos Wagner (Argonne/Chicago)
Daniel De Florian (UNSAM, Buenos Aires)	Christophe Grojean (DESY and Humboldt University)	Gilad Perez (Weizmann Institute)	Giulia Zanderighi (CERN and Oxford U.)

Our organisation

"on hold"

Sub-working Group / Task-force Group Conveners

Group TWiki	Group Mailing List	Mail to conveners	ATLAS	CMS		THEORY		
BR		Mail	Daniela Rebuzzi (Pavia)	Ivica Puljak (Split)		Ansgar Denner (Würzburg)	Sven Heinemeyer (IFCA)	Alexander Mück (Aachen)
ggF		Mail	Dag Gillberg (CERN)	Andrea Massironi (Northeastern U)		Bernhard Mistlberger (CERN)	Pier Monni (CERN)	
VBF	Mailing List	Mail	Claudia Bertella (Chinese Academy of Sciences)	Yacine Haddad (Imperial College)		Barbara Jäger (Tübingen)	Alexander Karlberg (Zurich)	
VH	Mailing List	Mail	Carlo Pandini (CERN)	Chris Palmer (Princeton) / Luca Perrozzi (ETH)		Emanuele Re (Annecy)	Francesco Tramontano (Naples)	
ttH/tH	Mailing List	Mail	Maria Moreno Llacer (CERN)	Benjamin Stieger (Nebraska Lincoln)		Stefano Pozzorini (Zürich)	Laura Reina (Florida)	
bbH/bH		Mail	Lei.Zhang (Freiburg)	Alexandre Nikitenko (IC, London)		Michael Spira (PSI)	Marius Wiesemann (Zürich)	
HH		Mail	Magdalena Slawinska (NIKHEF)	Maxime Gouzevitch (Lyon)	Roberto Salerno (Ecole Polytechnique)	Sally Dawson (BNL)	Christoph Englert (Glasgow)	
Fiducial and Template XS	Mailing List	Mail	Nicolas Berger (LAPP)	Predrag Milenovic (CERN)		Frank Tackmann (DESY)		
Offshell		Mail	Roberto Di Nardo (CERN)	Meng Xiao (Johns Hopkins University)		Stefan Hoeche (SLAC)	Nikolas Kauer (Royal Holloway)	Jeremie Quevillon (King's College)
MSSM Neutral		Mail	Allison McCarn (Michigan) / Guillermo Hamity (Sheffield)	Andrew Gilbert (IC)		Stefan Liebler (DESY)	Pietro Slavich (LPTHE, Paris)	Michael Spira (PSI)
MSSM/2HDM Charged		Mail	Jana Schaarshmidt (Seattle Washington)	Martin Flechl (Vienna)		Maria Ubiali (Cambridge)	Marco Zaro (LPTHE, Paris)	
NMSSM		Mail	Eric Feng (CERN)	Nadjieh Jafari (CERN)		Ulrich Ellwanger (LPT, Orsay)	Margarete Mühlleitner (Karlsruhe)	Florian Staub (CERN)
Neutral Extended Scalars		Mail	Xiaohu Sun (Chinese Academy of Sciences) / Xiangyang Ju (Wisconsin)	Raffaele Gerosa (Milano-Bicocca)		Heather Logan (Carleton)	Rui Santos (ISEL/CFTC, Lisbon)	Shufang Su (Arizona)
Exotic Decay		Mail	Roger Caminal (Massachusetts)	Cecile Caillol (Univ. of Madison Wisconsin)		Zhen Liu (Fermilab)	Jessie Shelton (UIUC)	
MCNet		Mail				Simon Plätzer (DESY)		
PDF		Mail	Joey Huston* (Michigan State)	Josh Bendavid (Caltech)		Maria Ubiali (Cambdridge)	Robert Thorne (UCL)	Joey Huston* (Michigan State)
ALL		Mail to all conveners						

Plans

The HXSWG should continue to be the open forum where theoretical results and tools relevant to Higgs physics can be scrutinised and discussed in order to produce consensus and eventually the recommendations to be adopted by ATLAS and CMS

- No plan for YR5 (not yet !)
- Results/recommendations can be documented through internal notes
- WGs are encouraged to mantain a roadmap/task list with clear deliverables and timescales
- Stimulate cross talk with HL-HE workshop activities
- The group is open to anybody willing to contribute

Dinner: tonight at Bois Joly

Fondue Jurassienne

Bois Joly
Hôtel *** Restaurant

1131 Route de télécabine
01170 CROZET

Meeting point: 7pm in front of building 40

Please pay 40 euro/45 Fr to Guillelmo today !

More cars needed !

Agenda

Monday: Filtration plant

09:00

Introduction — *Steering Committee*
222-R-001, CERN — 09:00 - 09:15

CMS Higgs recent highlights — *Nicholas Wardle*
222-R-001, CERN — 09:15 - 09:45

ATLAS recent Higgs highlights — *Daniele Zanzi*
222-R-001, CERN — 09:45 - 10:15

10:00

HL-LHC Higgs prospects — *Maria Cepeda Hermida*
222-R-001, CERN — 10:15 - 10:45

Coffee break
Multiple locations, CERN — 10:45 - 11:05

11:00

HH Theory — *Javier Mazzitelli et al.*
222-R-001, CERN — 11:05 - 11:35

HH Experiment (ATLAS) — *David Wardrope*
222-R-001, CERN — 11:35 - 11:50

HH Experiment (CMS) — *Alexandra Carvalho Antunes De Oliveira et al.*
222-R-001, CERN — 11:50 - 12:05

12:00

bbH report — *Lei Zhang et al.*
222-R-001, CERN — 12:05 - 12:35

News from LHC TOP WG — *Markus Seidel*
222-R-001, CERN — 12:35 - 13:00

13:00

Monday: Filtration plant

ttH: theory — *Stefano Augusto Pozzorini et al.*
222-R-001, CERN — 14:30 - 15:00

15:00

ttH: Discussion — *All*
222-R-001, CERN — 15:00 - 15:10

VH: experiment — *Luca Perrozzi*
222-R-001, CERN — 15:10 - 15:30

VH: theory — *Emanuele Re*
222-R-001, CERN — 15:30 - 15:50

VH: discussion — *All*
222-R-001, CERN — 15:50 - 16:00

16:00

Offshell: theory — *Dr. Jeremie Quevillon*
222-R-001, CERN — 16:00 - 16:10

Offshell: experiment — *Roberto Di Nardo et al.*
222-R-001, CERN — 16:10 - 16:20

Offshell: discussion — *All*
222-R-001, CERN — 16:20 - 16:30

Coffee Break
Multiple locations, CERN — 16:30 - 16:50

17:00

ggF: experiment — *Andrea Massironi*
222-R-001, CERN — 16:50 - 17:10

ggF: theory — *Bernhard Mistlberger*
222-R-001, CERN — 17:10 - 17:30

ggF: discussion — *All*
222-R-001, CERN — 17:30 - 17:40

VBF: theory — *Michael Rauch*
222-R-001, CERN — 17:40 - 18:00

18:00

VBF: experiment — *Claudia Bertella et al.*
222-R-001, CERN — 18:00 - 18:20

VBF: discussion — *All*
222-R-001, CERN — 18:20 - 18:30

Note different rooms !

Agenda

Introduction — *Chris Hays*
40-S2-C01 - Salle Curie, CERN — 09:00 - 09:20

FidXS & STXS — *Frank Tackmann et al.*
40-S2-C01 - Salle Curie, CERN — 09:30 - 09:50

Electroweak WG — *Yusheng Wu*
40-S2-C01 - Salle Curie, CERN — 10:00 - 10:20

Coffee Break
Multiple locations, CERN — 10:30 - 10:50

EFT in Top Physics — *Gauthier Durieux*
40-S2-C01 - Salle Curie, CERN — 10:50 - 11:10

Benchmark models for EFT — *Francesco Riva*
40-S2-C01 - Salle Curie, CERN — 11:20 - 11:40

Updated Global SM EFT Fit — *Jonathan R. Ellis*
40-S2-C01 - Salle Curie, CERN — 11:50 - 12:10

Tuesday morning: Salle Curie

Note different rooms !

Tuesday afternoon: Main Auditorium

Introduction — *Stefania Gori*
500-1-001 - Main Auditorium, CERN — 13:30 - 13:45

Report DM working group — *Johanna Gramling*
500-1-001 - Main Auditorium, CERN — 13:45 - 14:10

Report Long Lived Particles working group — *Dr. Jakub Scholtz*
500-1-001 - Main Auditorium, CERN — 14:10 - 14:35

NMSSM — *Nadjieh Jafari*
500-1-001 - Main Auditorium, CERN — 14:35 - 15:00

15:00

Coffee Break
Multiple locations, CERN — 15:00 - 15:20

Neutral MSSM Higgs — *Stefan Rainer Liebler*
500-1-001 - Main Auditorium, CERN — 15:20 - 15:45

Neutral Extended Scalars — *Rui Santos*
500-1-001 - Main Auditorium, CERN — 15:45 - 16:10

16:00

MSSM/2HDM charged Higgs — *Jana Schaarschmidt*
500-1-001 - Main Auditorium, CERN — 16:10 - 16:35

Higgs Exotic Decays — *Cecile Sarah Caillol*
500-1-001 - Main Auditorium, CERN — 16:35 - 17:00

17:00

Wrap up
500-1-001 - Main Auditorium, CERN — 17:00 - 17:15