

HIGGS 2024

Monday, 4 November 2024 - Friday, 8 November 2024

Uppsala University Main Building

Book of Abstracts

Contents

Registration	1
Summary of precision Higgs calculations (20+10)	1
ATLAS Higgs highlights (20+10)	1
CMS Higgs highlights (20+10)	1
Extended Higgs sectors (20+10)	1
Composite Higgs (20+10)	1
ATLAS joker talk (12+3)	1
CMS joker talk (12+3)	1
Precision measurements at the LHC - cross-section in different production modes, STXS (20+10)	2
Precision measurements at the LHC - properties: mass and width, couplings, CP, off-shell (20+10)	2
Higgs Monte Carlo simulations (20+10)	2
Higgs fermion couplings and interplay with flavour (20+10)	2
H to bb/cc at LHCb (20+10)	2
Rare decays, including 2nd generation fermions, at the LHC (20+10)	2
Di-Higgs theory overview (20+10)	2
Beyond the pure Higgs self-couplings –HEFT, SMEFT (20+10)	3
Non-resonant HH searches and Higgs boson self-coupling at the LHC (20+10)	3
EFT results in and beyond Higgs physics at the LHC (20+10)	3
EFT interplay with top/multi-boson (20+10)	3
Probing CP-violation in the Higgs sector (20+10)	3
Low-mass new scalars and Higgs decays to BSM particles at the LHC (20+10)	3
High-mass new scalars at the LHC. without H in the final state (20+10)	3

High-mass new scalars at the LHC, with H in the final state (20+10)	4
Experimental methods: ML in Higgs, including jet substructure and taggers (20+10)	4
Monte Carlo: backgrounds and specific precision computations (20+10)	4
Higgs physics as a probe of entanglement (20+10)	4
Interplay with cosmology probes: baryogenesis, gravitational waves (20+10)	4
Higgs and ALPs (20+10)	4
Indirect probes of the Higgs sector (20+10)	5
Higgs physics at future colliders (20+10)	5
Future Higgs factories and experimental challenges (20+10)	5
Closing and Higgs2025	5
Welcome	5

1

Registration

Plenary session 1 - sal X / 2

Summary of precision Higgs calculations (20+10)

Corresponding Author: raoul.rontsch@cern.ch

Plenary session 1 - sal X / 3

ATLAS Higgs highlights (20+10)

Plenary session 1 - sal X / 4

CMS Higgs highlights (20+10)

Plenary session 1 - sal X / 5

Extended Higgs sectors (20+10)

Corresponding Author: omo@hvl.no

Plenary session 1 - sal X / 6

Composite Higgs (20+10)

Corresponding Author: luigi.dellerose@unical.it

Plenary session 1 - sal X / 7

ATLAS joker talk (12+3)

Plenary session 1 - sal X / 8

CMS joker talk (12+3)

Plenary session 2 - sal X / 9

Precision measurements at the LHC - cross-section in different production modes, STXS (20+10)

Plenary session 2 - sal X / 10

Precision measurements at the LHC - properties: mass and width, couplings, CP, off-shell (20+10)

Plenary session 2 - sal X / 11

Higgs Monte Carlo simulations (20+10)

Corresponding Author: silvia.ferrario.ravasio@cern.ch

Plenary session 2 - sal X / 12

Higgs fermion couplings and interplay with flavour (20+10)

Corresponding Author: sophie.renner@cern.ch

Plenary session 2 - sal X / 13

H to bb/cc at LHCb (20+10)

Plenary session 2 - sal X / 14

Rare decays, including 2nd generation fermions, at the LHC (20+10)

Plenary session 3 - sal X / 15

Di-Higgs theory overview (20+10)

Corresponding Author: michael.spira@psi.ch

Plenary session 3 - sal X / 16

Beyond the pure Higgs self-couplings –HEFT, SMEFT (20+10)

Corresponding Author: raquel.gomez@cern.ch

Plenary session 3 - sal X / 17

Non-resonant HH searches and Higgs boson self-coupling at the LHC (20+10)

Plenary session 3 - sal X / 18

EFT results in and beyond Higgs physics at the LHC (20+10)

Plenary session 3 - sal X / 19

EFT interplay with top/multi-boson (20+10)

Corresponding Author: alejo.rossia@manchester.ac.uk

Plenary session 3 - sal X / 20

Probing CP-violation in the Higgs sector (20+10)

Corresponding Author: bahl@thphys.uni-heidelberg.de

Plenary session 4 - sal X / 21

Low-mass new scalars and Higgs decays to BSM particles at the LHC (20+10)

Plenary session 4 - sal X / 22

High-mass new scalars at the LHC. without H in the final state (20+10)

Plenary session 4 - sal X / 23

High-mass new scalars at the LHC, with H in the final state (20+10)

Plenary session 4 - sal X / 24

Experimental methods: ML in Higgs, including jet substructure and taggers (20+10)

Plenary session 4 - sal X / 25

Monte Carlo: backgrounds and specific precision computations (20+10)

Corresponding Author: frank.siegert@cern.ch

Plenary session 4 - sal X / 26

Higgs physics as a probe of entanglement (20+10)

Corresponding Author: rafael.tourinho.jadallah.aoude@cern.ch

Plenary session 5 - sal X / 27

Interplay with cosmology probes: baryogenesis, gravitational waves (20+10)

Corresponding Author: venus@stp.dias.ie

Plenary session 5 - sal X / 28

Higgs and ALPs (20+10)

Corresponding Author: anke.biekoetter@cern.ch

Plenary session 5 - sal X / 29

Indirect probes of the Higgs sector (20+10)

Corresponding Author: haisch@mpp.mpg.de

Plenary session 5 - sal X / 30

Higgs physics at future colliders (20+10)

Corresponding Author: patrick.r.meade@gmail.com

Plenary session 5 - sal X / 31

Future Higgs factories and experimental challenges (20+10)

Corresponding Author: patrizia.azzi@cern.ch

Plenary session 5 - sal X / 32

Closing and Higgs2025

Plenary session 1 - sal X / 33

Welcome

Corresponding Author: arnaud.ferrari@physics.uu.se