

**Session Program**

**12-14 Jul 2021**

**2021 Meeting of the Division of Particles and  
Fields of the American Physical Society  
(DPF21)**

***Higgs & Electroweak Physics***

Zoom

## Sunday 11 July

14:30

### Higgs & Electroweak Physics: HIG 1B

Session | Location: Zoom, Track B | Conveners: Nicholas Bower, Nan Lu

14:30-14:45

**Measurement of the properties of Higgs boson production at  $\sqrt{s}=13$  TeV in the diphoton decay channel using 139  $\text{fb}^{-1}$  of  $pp$  collision data with the ATLAS experiment**

**Speaker**

Chen Zhou

14:45-15:00

**Analysis Optimization of the VBF HWW Measurement at the ATLAS Experiment**

**Speaker**

Sagar Addepalli

15:00-15:15

**ttH and ttW analysis in multileptons channel**

**Speaker**

Rohin Thampilali Narayan

15:15-15:30

**Higgs to two b's or not two b's: The measurement for a Standard Model Higgs boson, produced in association with a W or Z boson, decaying into a pair of b-quarks in  $pp$  collisions at 13 TeV with the ATLAS detector**

**Speaker**

Ms Amy Tee

15:30-15:45

**NLO Merging using HJets**

**Speaker**

Tinghua Chen

15:45-16:00

**W + W - H production through bottom quarks fusion at hadron colliders**

**Speaker**

Biswajit Das

16:00

14:30

### Higgs & Electroweak Physics: HIG 1L

Session | Location: Zoom, Track L | Conveners: Laura Reina, Evelyn Jean Thomson

14:30-14:45

**Higgs to charm quarks in vector boson fusion plus a photon**

**Speaker**

Sze Ching Iris Leung

14:45-15:00

**Search for the Decay of the Higgs Boson to Charm Quarks with the ATLAS Experiment**

**Speaker**

Zijun Xu

15:00-15:15

**Search for the Higgs boson decaying to a pair of muons in pp collisions at 13 TeV with the ATLAS detector**

**Speaker**  
Jay Chan

15:15-15:30

**Search for Higgs boson decays to bottom quarks in the vector boson fusion production mode with the ATLAS detector**

**Speaker**  
Matthew Henry Klein

15:30-15:45

**Study of inclusive Higgs-boson production at high transverse momentum in the  $H \rightarrow b\bar{b}$  decay mode with the ATLAS detector**

**Speaker**  
Dr Andrea Sciandra

15:45-16:00

**Using the light: A search for vector boson fusion production of the  $H(\rightarrow b\bar{b})\gamma$  final state at  $\sqrt{s}=13$  TeV with the ATLAS detector**

**Speaker**  
Carolyn Gee

16:00

16:15

**Higgs & Electroweak Physics: HIG 2B**

**Session** | **Location:** Zoom, Track B | **Conveners:** Nan Lu, Laura Reina, Robin Erbacher

16:15-16:30

**Search for resonant pair production of Higgs bosons in the  $bb\bar{b}\bar{b}$  final state using 139 fb<sup>-1</sup> of  $\sqrt{s} = 13$  TeV pp collision data with the ATLAS detector**

**Speaker**  
Rui Zhang

16:30-16:45

**Search for non-resonant di-Higgs production in the  $HH \rightarrow b\bar{b}b\bar{b}$  decay channel in pp collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector**

**Speaker**  
Alex Zeng Wang

16:45-17:00

**Search for Resonant and Non-Resonant VHH Production**

**Speaker**  
Nicholas Graves Kyriacou

17:00-17:15

**Studies of  $t\bar{t}HH$  with the CMS Detector**

**Speaker**  
Wei Wei

17:15-17:30

**Search for di-Higgs production with ATLAS experiment in the  $b\bar{b}l\nu l\nu$  final state**

**Speaker**  
Zhe Yang

17:30-17:45

**Theoretical Uncertainties in the Higgs Boson Pair Production in the  $b\bar{b}$   $\tau\tau$  Decay Channel**

**Speaker**

Jem Aizen Mendiola Guhit

17:45

# Monday 12 July

14:30

## Higgs & Electroweak Physics: HIG 3B

**Session** | **Location:** Zoom, Track B | **Conveners:** Nan Lu, Tania Natalie Robens

14:30–14:45 **Break**

14:45–15:00 **Di-Higgs observation as a probe of Higgs self-coupling**

**Speaker**

Dr Amit Adhikary

15:00–15:15

**Triple Higgs production in and beyond the SM at proton-proton colliders**

**Speaker**

Gilberto Tetlalmatzi-Xolocotzi

15:15–15:30

**Beyond the Standard Model Effective Field Theory: The Singlet Extended Standard Model and Higgs Fits**

**Speaker**

Ian Lewis

15:30–15:45

**Effective Field Theory interpretation of the VBF HWW differential analysis with the ATLAS detector**

**Speaker**

Jiayi Chen

15:45–16:00

**Search for Rare Higgs Decays into Z Bosons and J/Psi Mesons or into Quarkonium Pairs with the CMS Experiment**

**Speaker**

Mr Himal Acharya

16:00

16:15

## Higgs & Electroweak Physics: HIG 4B

**Session** | **Location:** Zoom, Track B | **Conveners:** Manfred Kraus, Manfred Paulini

16:15–16:30

**Constraints on anomalous Higgs boson couplings to vector bosons and fermions in its production and decay using the four-lepton final state**

**Speaker**

Heshy Roskes

16:30–16:45

**Searching for lepton-flavour-violating decays of the Higgs boson with the ATLAS detector**

**Speaker**

Michaela Mlynarikova

16:45–17:00 **Off-shell Higgs Couplings in  $H^* \rightarrow ZZ \rightarrow \ell\ell\nu\nu$**

**Speaker**

Han Qin

17:00-17:15 **Directly Probing the Higgs-top Coupling at High Scales**

**Speaker**

Roshan Mammen Abraham

17:15-17:30 **Machine Learning the Higgs-top CP Measurement**

**Speaker**

Rahool Barman

17:30-17:45 **Electroweak Restoration at the LHC and Beyond**

**Speaker**

Samuel Lane

17:45

## Tuesday 13 July

14:30

### Higgs & Electroweak Physics: HIG 5B

**Session** | **Location:** Zoom, Track B | **Conveners:** Xiangyang Ju, Nathaniel Craig

14:30–14:45

**NLO EW corrections to  $W^{+}Z\gamma$  production in SM and tree-level effects of dimension-eight operators in SMEFT at the LHC**

**Speaker**

Huanfeng Cheng

14:45–15:00

**Higgs Physics at FCC-ee**

**Speaker**

Jan Eysermans

15:00–15:15

**Quark and Gluon Contents of a Lepton at High Energies**

**Speaker**

Mr Yang Ma

15:15–15:30

**Muon-electron scattering at NNLO for the MUonE experiment**

**Speaker**

Syed Mehedi Hasan

15:30–15:45

**Collider and GW complementarity in the 2HDM**

**Speaker**

AJAY Kaladharan

15:45–16:00

**Strong First-Order Electroweak Phase Transitions in the Standard Model with a Singlet Extension**

**Speaker**

Anthony Hooper

16:00

16:15

### Higgs & Electroweak Physics: HIG 6B

**Session** | **Location:** Zoom, Track B | **Conveners:** Manfred Paulini, Xiangyang Ju

16:15–16:30

**Colliding light: photon fusion production at ATLAS**

**Speaker**

Jesse Liu

16:30–16:45

**Search for vector boson scattering production of  $VW$  pairs in the semi-leptonic channel at CMS**

**Speaker**

Flavia Cetorelli

16:45–17:00

**Deep Learning-based Tagger for Boosted  $WW^{(*)}$  Semi-leptonic Decays at ATLAS**

**Speaker**

Dewen Zhong

17:00–17:15

**Drell-Yan angular lepton distributions at small  $x$  from TMD factorization****Speaker**

Prof. Ian Balitsky

17:15–17:30

**First Order Electroweak Phase Transition from Weakly Coupled sub-GeV Physics****Speaker**

Dr Hooman Davoudiasl

17:30–17:45

**A measurement of the  $D^* \rightarrow \pi(K \pi \pi^0)$  decay channel as pertaining to the production of a  $W$  boson in association with a charm quark in  $pp$  collisions at  $\sqrt{s} = 13 \text{ ; } \mathrm{TeV}$  with the ATLAS Detector****Speaker**

Rohith Anand Karur

17:45