

Session Program

5-9 Jun 2023

HPNP2023 - The 6th International Workshop on "Higgs as a Probe of New Physics 2023"

Plenary

Osaka University, Nambu Yoichiro Hall
1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

Monday 5 June

10:00

Plenary: Plenary 1

Session | **Location:** Osaka University, Nambu Yoichiro Hall, 1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

10:00–10:30 **Higgs couplings to fermions**

Speaker

Tao Han

10:30–11:00 **Symmetries of the 2HDM and Beyond**

Speaker

Prof. Apostolos Pilaftsis

11:00

11:30

Plenary: Plenary 2

Session | **Location:** Osaka University, Nambu Yoichiro Hall, 1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

11:30–12:00 **General review of Higgs properties at ATLAS**

Speaker

Sanmay Ganguly

12:00–12:30 **The newest Higgs results at CMS**

Speaker

Xiaohu Sun

12:30–13:00 **A Classifier for VBF and GGF Higgs Productions with Deep Learning**

Speaker

Prof. Cheng-Wei Chiang

13:00

14:30

Plenary: Plenary 3

Session | **Location:** Osaka University, Nambu Yoichiro Hall, 1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

14:30–15:00 **Signals of new heavy scalars in the flavor-aligned 2HDM**

Speaker

Howard Haber

15:00–15:15

Exotic but efficient channels to probe the fermiophobic Higgs boson in the type-1 2HDM

Speaker

Prof. Jeonghyeon Song

15:15–15:30 **Double Aligned two Higgs Doublet Models at the LHC**

Speaker

Prof. Michihisa Takeuchi

15:30–15:45 **Exploring Wrong Sign Scenarios in the Yukawa-Aligned 2HDM**

Speaker

Dr Kei Yagyu

16:00

15:45–16:00

Precise predictions for the trilinear Higgs coupling in arbitrary models**Speaker**

Johannes Braathen

16:30

Plenary: Plenary 4**Session** | **Location:** Osaka University, Nambu Yoichiro Hall, 1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

16:30–17:00

Pragmatic extensions of the Standard Model**Speaker**

Bohdan Grzadkowski

17:30

17:00–17:30

GOOFy Symmetries of the Two Higgs Doublet Model**Speaker**

Prof. Pedro Ferreira

Tuesday 6 June

09:00

Plenary: Plenary 5

Session | **Location:** Osaka University, Nambu Yoichiro Hall, 1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

09:00–09:30

Double Higgs Production in Composite 2HDM

Speaker

Stefania De Curtis

09:30–10:00

Di-HPNP

Speaker

Stefano Moretti

10:00–10:15

Precise predictions for Higgs pair productions and decays

Speaker

Prof. Jian Wang

10:15–10:30

Benchmarking Di-Higgs Production in Various Extended Higgs Sector Models

Speaker

Dr Duarte Azevedo

10:30–10:45

More realistic test on the Higgs EFT

Speaker

Kohsaku Tobioka

10:45–11:00

Coupling Sum Rules and Oblique Corrections in Gauge-Higgs Unification

Speaker

Yutaka Hosotani

11:00

14:30

Plenary: Plenary 6

Session | **Location:** Osaka University, Nambu Yoichiro Hall, 1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

14:30–15:00

Recent topics on cosmology with primordial black holes and their implications for particle physics

Speaker

Kazunori Kohri

15:00–15:15

Primordial black holes from the boiling Universe

Speaker

Ke-Pan Xie

15:15–15:30

Probing first-order electroweak phase transition via primordial black holes

Speaker

Masanori Tanaka

16:00

15:30–15:45

Quartic Gradient Flow

Speaker

Dr Ryusuke Jinno

15:45–16:00

Cosmological Phase Transitions in Composite Higgs Models

Speaker

Kohei Fujikura

Wednesday 7 June

09:00

Plenary: Plenary 7

Session | **Location:** Osaka University, Nambu Yoichiro Hall, 1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

09:00–09:30

BSM Higgs and an Electroweak Phase Transition: Recent Developments

Speaker

Michael Ramsey-Musolf

09:30–10:00

FOEWPT, THCs and GWs in the 2HDM

Speaker

Sven Heinemeyer

10:00–10:30

Two aspects of Higgs Pair Production: Precision and Relation to Electroweak Baryogenesis

Speaker

Milada Margarete Mühleleitner

10:30–10:45

Shedding light on the electroweak phase transition from exotic Higgs boson decays at the lifetime frontiers

Speaker

Wei Liu

10:45–11:00

Electroweak Baryogenesis in two Higgs doublet model with alignment scenario

Speaker

Yushi Mura

11:00

11:30

Plenary: Plenary 8

Session | **Location:** Osaka University, Nambu Yoichiro Hall, 1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

11:30–12:00

Higgs physics with ILC

Speaker

Dr Junping Tian

12:00–12:30

Exploring new physics by comprehensive studies of loop corrected decays of various Higgs bosons

Speaker

Mariko KIKUCHI

12:30–13:00

Brief Introduction to Muon Colliders

Speaker

Tao Han

13:00

Thursday 8 June

09:00

Plenary: Plenary 9

Session | **Location:** Osaka University, Nambu Yoichiro Hall, 1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

09:00–09:30

Decay of the Mediator Particle at Threshold

Speaker

Dr Shigeki Matsumoto

09:30–10:00

Electroweak corrections to Scalar Dark Matter Direct Detection

Speaker

Rui Santos

10:00–10:15

Lepton flavor violation and DM constraints in a radiative seesaw model

Speaker

Osamu Seto

10:15–10:30

Light lepton portal dark matter meets the LHC

Speaker

Yuji Omura

10:30–10:45

Thermal production of bosonic dark matter and Bose-enhancement

Speaker

Wen Yin

10:45–11:00

Positivity Bounds on Higgs-Portal Dark Matter

Speaker

Dr Kimiko Yamashita

11:00

11:30

Plenary: Plenary 10

Session | **Location:** Osaka University, Nambu Yoichiro Hall, 1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

11:30–12:00

Detecting Hidden Photon Dark Matter via the Excitation of Qubits

Speaker

Takeo Moroi

12:00–12:15

Search for lepton flavor violation at FASER

Speaker

Takashi Shimomura

12:15–12:30

Large muon EDM in two Higgs doublet model and its extension

Speaker

Yoshihiro SHIGEKAMI

12:30–12:45

Large SU(2) multiplet scalars providing sizable muon g-2 and its phenomenology

Speaker

Prof. Takaaki Nomura

12:45–13:00

Muon ($g - 2$) and Thermal WIMP DM in $U(1)_{L\mu-L\tau}$ Models

Speaker

Mr Jongkuk Kim

13:00

Friday 9 June

09:00

Plenary: Plenary 11

Session | **Location:** Osaka University, Nambu Yoichiro Hall, 1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

09:00–09:30

A Theory Vision for the Higgs Boson

Speaker

Ian Low

09:30–10:00

Constraining CP4 3HDM with meson oscillations

Speaker

Prof. Igor Ivanov

10:00–10:15

Measuring the QCD color structure of the Higgs particle

Speaker

Prof. Myeonghun Park

10:15–10:30

Exposing new scalars hiding behind the Higgs boson

Speaker

Hao Zhang

10:30–10:45

Phenomenology of anomaly-free axion in three Higgs doublet model

Speaker

Kodai Sakurai

10:45–11:00

Leading two-loop corrections to the Higgs di-photon decay in the inert doublet model

Speaker

Masashi Aiko

11:00

11:30

Plenary: Plenary 12

Session | **Location:** Osaka University, Nambu Yoichiro Hall, 1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

11:30–12:00

On the Weyl gravity extension of Higgs inflation

Speaker

Hyun Min Lee

12:00–12:30

Leptogenesis from a CP-violating inflation

Speaker

Dr Venus Keus

12:30–12:45

Boltzmann or Bogoliubov? A Case of Gravitational Higgs Production

Speaker

Kunio Kaneta

12:45–13:00

Polychronic Tunneling

13:00

Speaker
Yutaro Shoji

14:30

Plenary: Plenary 13

Session | **Location:** Osaka University, Nambu Yoichiro Hall, 1-1 Machikaneyama-cho, Toyonaka, Osaka, Japan

14:30–15:00 **muTRISTAN**

Speaker
Ryuichiro Kitano

15:00–15:15

Probing new physics beyond the Standard Model at multi-TeV muon colliders

Speaker
Dr Adil Jueid

15:15–15:45 **Probing Baryogenesis with Radiative Beauty Decay and Electron EDM**

Speaker
George Wei-Shu Hou

15:45