

A photograph of Osaka Castle, a large white building with multiple tiers and dark green roofs, partially obscured by a large, blooming cherry blossom tree in the foreground. The sky is clear and blue.

HPNP2021

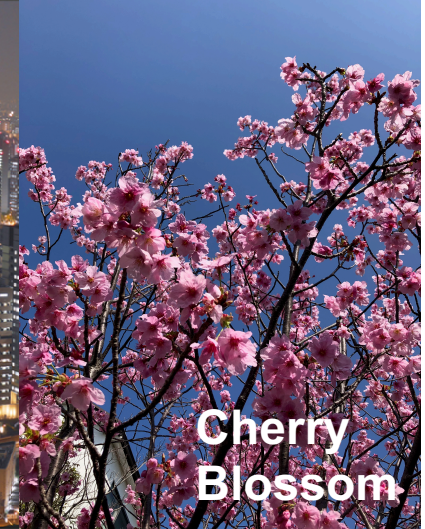
"Higgs as a Probe of New Physics" Special Edition 2021

25.-27. March 2021, Osaka University, Japan



HPNP2021

"Higgs as a Probe of New Physics" Special Edition 2021
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Cherry Blossom

HPNP2021 Opening Address



大阪大学
OSAKA UNIVERSITY

Shinya Kanemura
with LOC

Mayumi Aoki, Mitsuru Kakizaki, Kin-ya Oda, Tetsuo Shindou,
Hiroaki Sugiyama, Koji Tsumura, Kei Yagyu



Osaka Univ.
Dr. Wani

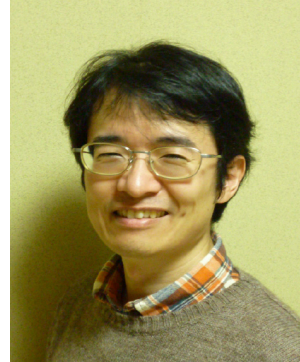
Local Organizing Committee



Mayumi Aoki
Kanazawa U.



Mitsuru Kakizaki
U. Toyama



Hiroaki Sugiyama
Toyama Pref. U.



Kin-ya Oda
Osaka U.



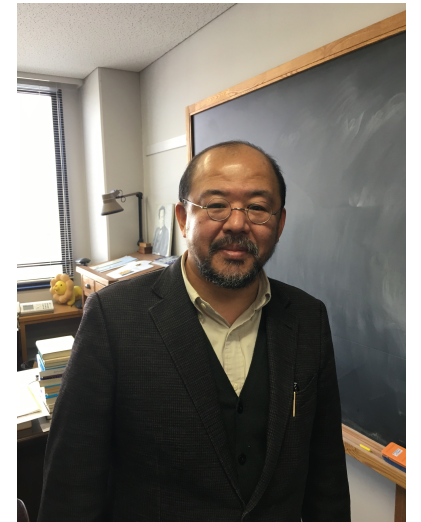
Tetsuo Shindou
Kogakuin U.



Koji Tsumura
Kyushu U.



Kei Yagyu
Osaka U.



Shinya Kanemura
Osaka U.

New Higgs Working Group (Japan)

Starting from domestic activity
at 2012

Still continuing

Up to now, 29 regular meetings
were held in Toyama and Osaka

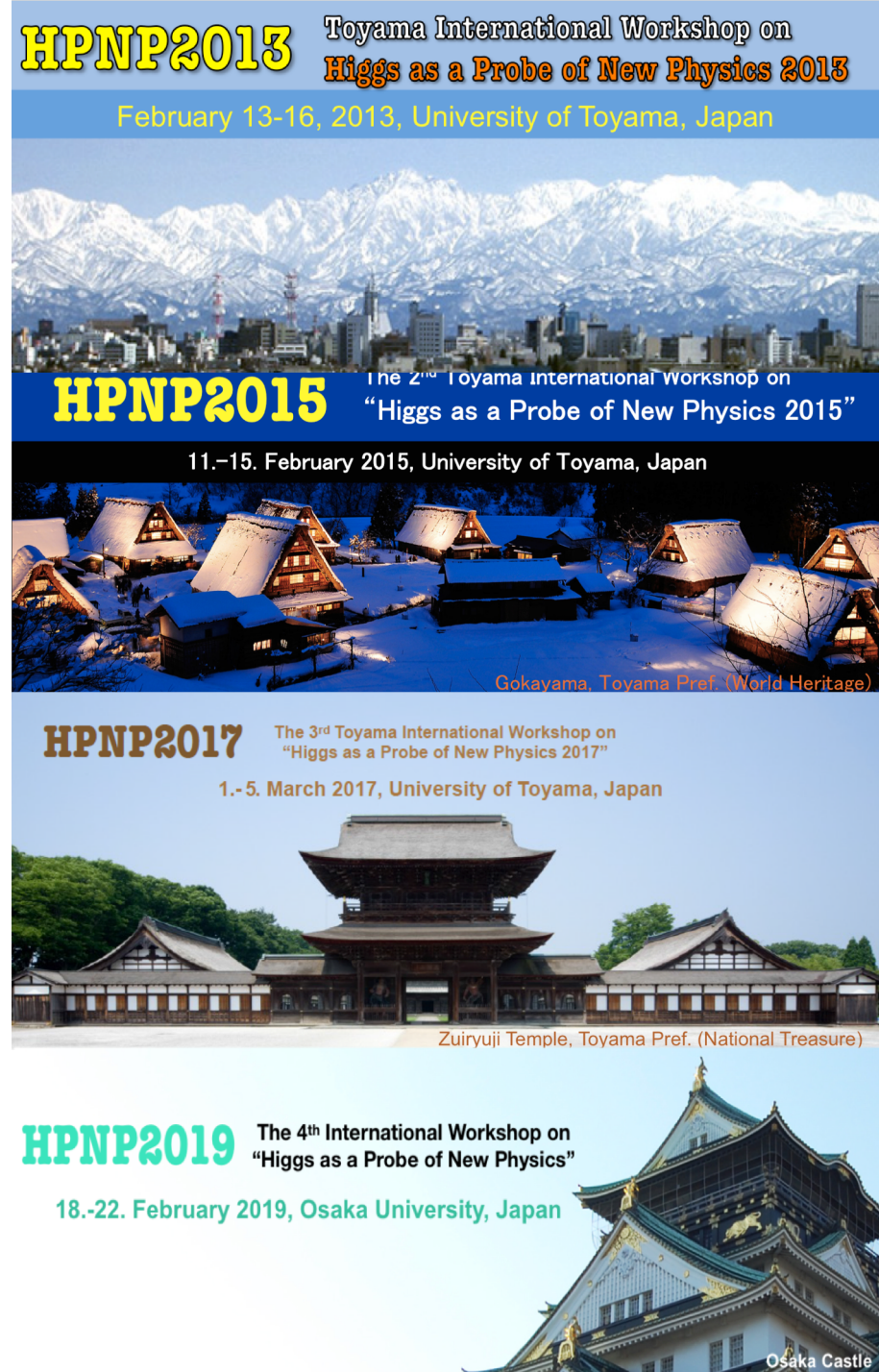


23th Regular Meeting of NHWG
Osaka University

Higgs as a Probe of New Physics

With the help of the members of NHWG, series of the international workshop “HPNP” have been organized.

- | | participants |
|-------------------------------|--------------|
| • HPNP2013 (U. of Toyama) | 85 |
| • HPNP2015 (U. of Toyama) | 120 |
| • HPNP2017 (U. of Toyama) | 105 |
| • HPNP2019 (Osaka University) | 126 |





HPNP2019 at Osaka Univeristy

HPNP2021

"Higgs as a Probe of New Physics" Special Edition 2021
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HPNP2021: Special Edition of HPNP held ONLINE

- Three-day online workshop
- **229** participants
- **24+56** talks (**plenary** + **parallel**)
- **37** posters

Though online, it is very nice to meet many physicists in such a topical conference from all around the world.

Current status of particle physics

- Standard Model is a good description of the nature below EW.
- No new particle has been found up to now.
- Still many problems in the SM such as neutrino mass, dark matter, baryogenesis, inflation, hierarchy, flavor, unification, gravity, ...
- Many BSM models are proposed, their phenomenology is studied.
- Variety of current and future experiments to explore Higgs physics and BSM models, such as SuperKEKB, HL-LHC, HE-LHC, CEPC, FCC, ILC, CLIC, LISA, DECIGO, ...

Higgs must be an important portal for NEW PHYSICS!

HPNP2021 Charge

- What is the **nature** of the Higgs boson?
- What is the **dynamics** behind the EW symmetry breaking?
- Why the collider experiments show **SM-like** up to now?
- How exactly **determine the Higgs sector** by future experiments?
- **BSM models**: Neutrino Mass, Dark Matter, Baryogenesis, ...
- What is **the role of the Higgs** sector for BSM?
- **Cosmological** Connections? Phase transition etc.

Let us thoroughly discuss these issues!

HPNP2021 Schedule

**Online !!
Time Zone Problem,
No Banquet, No Social Events**

**See
Website
HPNP2021!**

Special Talk by Y. Hosotani (S1)

Plenary Sessions (S1, 2, 4, 6, 7, 11, 12)

Parallel Sessions (S4, 8, 10)

Poster Sessions (S5 and S9)

Best Poster Award (S12)

Japan Standard Time

	Thu. Mar. 25	Fri. Mar. 26	Sat. Mar. 27
08:00-10:00	Opening Session Session 1 Plenary Session	Session 5 Poster Session	Session 9 Poster Session
10:30-12:00	Session 2 Plenary Session	Session 6 Plenary Session	Session 10 Parallel Session
16:00-17:30	Session 3 Plenary Session	Session 7 Plenary Session	Session 11 Plenary Session
18:00-20:00	Session 4 Parallel Session	Session 8 Parallel Session	Session 12 Plenary Session Closing Session

Central European Time

	Thu. Mar. 25	Fri. Mar. 26	Sat. Mar. 27
00:00-02:00	Opening Session Session 1 Plenary Session	Session 5 Poster Session	Session 9 Poster Session
02:30-04:00	Session 2 Plenary Session	Session 6 Plenary Session	Session 10 Parallel Session
08:00-09:30	Session 3 Plenary Session	Session 7 Plenary Session	Session 11 Plenary Session
10:00-12:00	Session 4 Parallel Session	Session 8 Parallel Session	Session 12 Plenary Session Closing Session

Pacific Daylight Time

	Wed. Mar. 24	Thu. Mar. 25	Fri. Mar. 26	Sat. Mar. 27
00:00-01:30		Session 3 Plenary Session	Session 7 Plenary Session	Session 11 Plenary Session
02:00-04:00		Session 4 Parallel Session	Session 8 Parallel Session	Session 12 Plenary Session Closing Session
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Historical Physicists in Osaka U.

Hideki Yukawa
(Prof. in Kyoto)



Ph. D (Osaka U.)

Meson Theory
1935

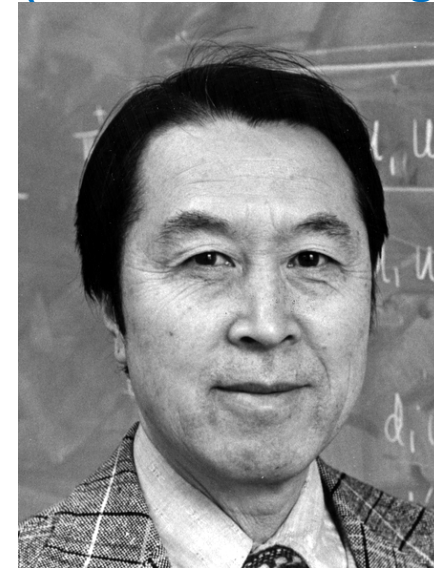
Ryoyu Utiyama
(Prof. in Osaka)



Ph. D (Osaka U.)

General gauge theory
1954

Yoichiro Nambu
(Prof. in U. Chicago)

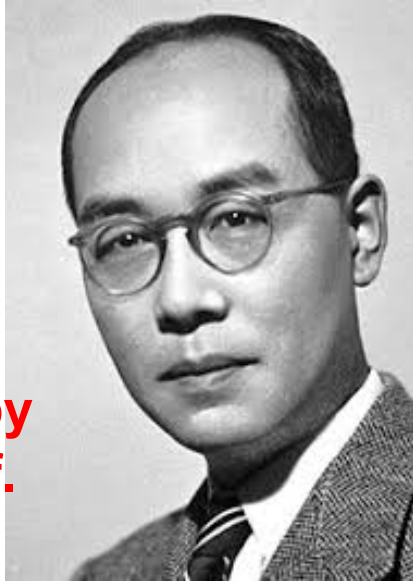


Ph. D (U. Tokyo)
Special Honorary Prof. (Osaka U.)

Spontaneous Symmetry Breaking 1961
String Theory 1970

Historical Physicists in Osaka U.

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Ph. D (Osaka U.)

Meson Theory
1935

Special Talk by
Emeritus Prof.
Y. Hosotani

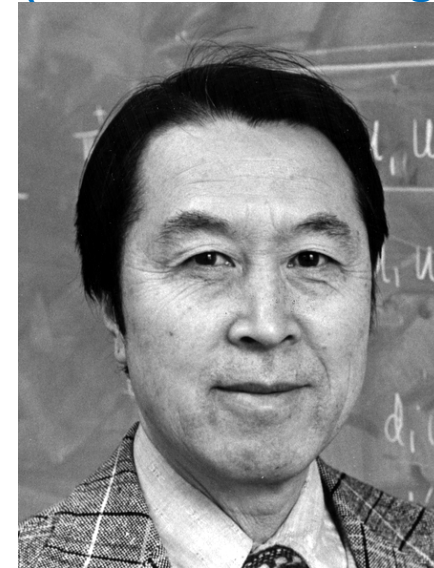
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General Gauge Theory
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Nambu Yoichiro
(Prof. in U. Chicago)



Ph. D (U. Tokyo)

Special Honorary Prof. (Osaka U.)

Spontaneous Symmetry Breaking 1961
String Theory 1970

Best Poster Awards

- Tradition of HPNP workshops
Poster Award Competition for Ph. D Students will be held.
- Poster Jury Members for **HPNP2021**:
 - Prof. Howard. E. Haber (Chair)
 - Prof. Fawzi Boudjema
 - Prof. Tao Han
 - Prof. George Wei Shu Hou
 - Prof. Michael E. Peskin
- Best Poster Awards and Honorable Mentions will be announced in Closing Session (End of Session 12)

HPNP2013



HPNP2015



HPNP2017



HPNP2019



We thank Poster Jury for their justice in advance!

Acknowledgments



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- **JSPS Grant-in-Aid for Scientific Research (A)
No. 20H00160
(基盤研究(A) No. 20H00160)**
- **Osaka University
Graduate School of Science**



JSPS



大阪大学
OSAKA UNIVERSITY



Graduate School
of Science

International Advisory Committee

Fawzi Boudjema	(Annecy, LAPTH)	Qing-Hong Cao	(Peking U.)
Cheng-Wei Chiang	(National Taiwan U.)	Christophe Grojean	(DESY)
Howard E. Haber	(UC Santa Cruz)	Junji Hisano	(KMI, Nagoya U.)
Yutaka Hosotani	(Osaka U.)	Pyungwon Ko	(KIAS)
Stefano Moretti	(U. of Southampton)	Mihoko Nojiri	(KEK / Kavli IPMU)
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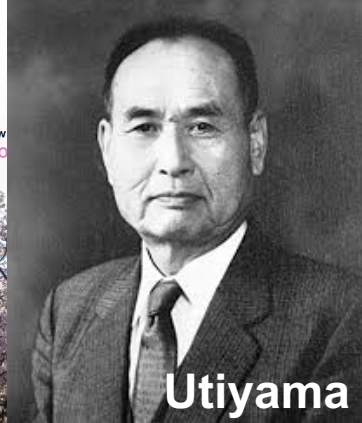


Osaka Univ.



Osaka Castle

HPNP2021
"Higgs as a Probe of New
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Utiyama



Osaka Univ.



Downtown Osaka

Enjoy HPNP2021!

Thank you very much for joining HPNP2021!



OSAKA Sushi



Dotombori, Osaka



Takoyaki



Naomi OSAKA