

-KAON2022 -  
International Conference on Kaon Physics 2022

September 13th – 16th, 2022

Nambu Yoichiro Hall  
Osaka University, Toyonaka, Osaka, JAPAN

<https://conference-indico.kek.jp/event/169/>

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## Revision History

- v1.3.5 Sep. 14, 2022: Updated the program to reflect all the changes.
- v1.3.4 Sep. 12, 2022: Changed the morning program for Sep. 14.
- v1.3.3 Sep. 11, 2022:
  - Added some info on MySOS after arrival.
  - Added a last-minute registrant.
- v1.3.2 Sep. 10, 2022: Added an additional instruction for on-site speakers.
- v1.3.1 Sep. 10, 2022: Fixed the speaker for the talk titled “First results for searches of exotic decays with NA62 in beam-dump mode” on 9/16.
- v1.3 Sep. 9, 2022:
  - The color of MySOS app should turn BLUE, instead of green.
  - Added description on how to come to the Conference venue.
  - Added more information on the poster session.
  - Added chairpersons for oral sessions.
- v1.2 Sep. 5, 2022: Added participants list.
- v1.1 Sep. 5, 2022: Added more instructions on the access to the Conference Venue.
- v1.0 Sep. 4, 2022

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# 1 Before leaving your country

## 1.1 COVID-19 Vaccine Certificates

If you have official certificates showing that you have had **three** vaccine shots for COVID-19, and if you are arriving in Japan after 0:00 on September 7, 2022 JST, you do not need a pre-departure PCR test. The vaccine certificate should indicate the name of the three vaccines. For details, please refer to [https://www.mhlw.go.jp/stf/covid-19/border\\_vaccine.html](https://www.mhlw.go.jp/stf/covid-19/border_vaccine.html).

If you do not fall into the above category, please refer to [Visa and entry to Japan](#) on the Conference web page.

## 1.2 App and pre-registration for entering Japan

Install [MySOS app](#) on your smartphone to use “Fast Track” to register your information and upload your vaccination certificate. The app will also guide you to “Visit Japan Web” to register your information for immigration and custom procedures. Finish these BEFORE you leave your home.

The registered information will be reviewed while you are on your way to Japan, and once you arrive in Japan, you only have to show your passport and [green blue](#) or yellow screen on your smartphone.

After entering Japan, MySOS app will show that your isolation will be terminated on the following day, and show a message in Japanese in the following day. Just ignore them. Also, do not tap “Check-in” or “I’m here” button. You may get warnings if you do, but just ignore them. Some more information is available under “Upon Arrival” on [our web page](#).

# 2 Tips against COVID-19

Follow the next general guidelines.

- Wear a mask on public transport and inside buildings.
- Wear a mask when you talk.
- Use nonwoven fabric masks. Urethane masks are useless.
- Try to keep silence when you eat or drink.

In addition, here are useful tips from the Professor working for the Department of Safety and Hygiene who has been handling many cases in the University by himself.

- Do not go to Karaoke, period.
- Avoid Izakaya (居酒屋) which is a common drinking place in Japan. They are often small and crowded, and thus has a higher chance of getting infected.
- Should you chose Izakaya, look for one with private rooms.
- BBQ house (yakiniku-ya, 焼肉屋) is relatively safe if it has a duct fan right above the grill on each table.

If you do not feel well, please call the Secretariat at 080-8838-3920 at any time. The cellphone numbers of the local organizers are listed at the end of the printed version of this Bulletin. We will initiate necessary reactions for you. Also, stay at your hotel.

## 3 Tips in Japan

### 3.1 Climate

In September, low pressure and high pressure parts pass through Japan with an one-week cycle, so expect to have rain for a couple of days during the Conference. The temperatures at Osaka are lows around 293K and highs around 303K. (Celsius is the standard unit for temperature in Japan, by the way.)

### 3.2 Currency

The currency in Japan is Yen. Recently, 1 US \$  $\sim$  1 EUR  $\sim$  135–140 Yen. You get better exchange rates (in both ways) in Japan than in foreign countries. (You can check it by comparing the difference between selling and buying rates.)

### 3.3 Tipping

Tipping is uncommon in Japan. There is no need to leave tips at restaurants, bars, coffee shops, to taxi drivers, or on the bed side. Just pay the amount presented to you.

### 3.4 AC power

The AC power in Japan carries 100 V at 60 Hz in the western part of Japan including Osaka. The AC outlets (Fig. 1) accept two 6-mm-wide and 17-mm-long parallel blades separated by 12 mm, the same pair of blades as in the US. Bring your favorite AC plug adapter. Most of the AC outlets do not have a hole for the third pin for ground, so you may need a 3-pin  $\rightarrow$  2-pin adapter as shown in Fig. 2.



Figure 1: Common AC outlets in Japan.



Figure 2: 3-pin to 2-pin adapter.

### 3.5 Crossing Roads

In Japan, automobiles drive on the **left**-hand side as in UK, as shown in Fig. 3. When you cross a road, watch out for cars approaching you from your **right**-hand side (which can be your right side or wrong side depending on where you come from).

### 3.6 Using Trains, Subways, and Monorails

At train/subway/monorail stations, platforms and the outside area are separated by gates. A ticket or an IC card is required to pass through the gates; at the origin when

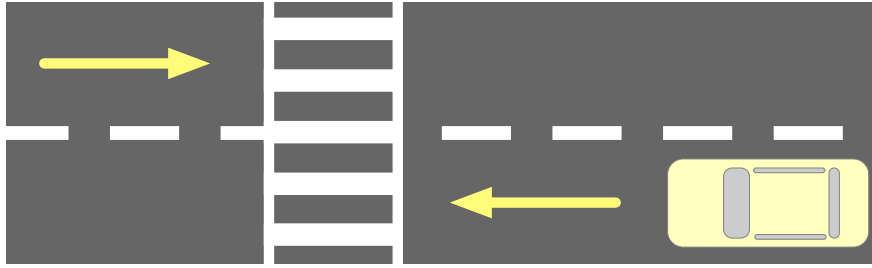


Figure 3: Watch out for cars coming from your right.

you enter the platform area, and at the destination when you leave the platform area.

### 3.7 Get ICOCA IC card

For moving around Osaka area, we highly recommend you to use “ICOCA” IC card shown in Fig. 4. You only have to touch a sensor at the station gates with the card. You can buy an ICOCA IC card from ticket vending machines in most stations of many railway companies, including JR, Nankai, Osaka Metro, Kita-Osaka Kyuko, Osaka Monorail, and Hankyu. The card costs 3000 Yen including 500 Yen of deposit fee. You can charge the card at ticket vending machines in units of 1000 Yen. You can use the card for busses, and train companies across Japan, and for purchases at convenient stores. At the end of your stay, you can get back the remaining amount – 220 Yen handling charge + 500 Yen deposit by returning the card to ticket counters at major stations (it should belong to the same company as the one you purchased the card, though), or buy something at convenience stores, or keep it for your next visit.



Figure 4: ICOCA IC card

### 3.8 Still want to buy a ticket everytime?

If you do not use ICOCA IC card, you have to purchase a ticket every time you enter the platform area. Find your destination on the map displayed above vending machines to find the amount, and purchase a ticket for that amount. Vending machines accept 1000 Yen notes, and some accept 10000 Yen notes.

Insert your ticket to a gate when you enter the platform area, and retrieve the ticket. When you exit the platform area, insert the ticket into the gate. The ticket will not be returned.

### **3.9 Escalators**

In Osaka area, people stand on the right-hand side on escalators to let people in hurry run through the left. In Tokyo, people stand on the left-hand side, instead. However, train companies instruct people not to walk or run on escalators for safety reasons, and stand on the both sides for maximizing the flow rate.

If you are from a foreign country, you have a privilege of pretending that you do not know such a local custom, and teach the global standard of standing on both sides.

### **3.10 Bathroom and bidet seat**

Toilet seats in most hotels and even many public bathrooms are equipped with a small shower to wash bottom after wiping. Use toilet paper to wipe off remaining water. Just drain toilet papers.

## 4 Access to Your Hotel

Instructions on how to access your hotel and the conference venue are available on [Travel and Accommodation](#) in the Conference web page.

Osaka has the following major gateways, [Kansai International Airport \(KIX\)](#), [Osaka International Airport \(ITM\)](#), and Shin-Osaka Station for Shinkansen (bullet train).

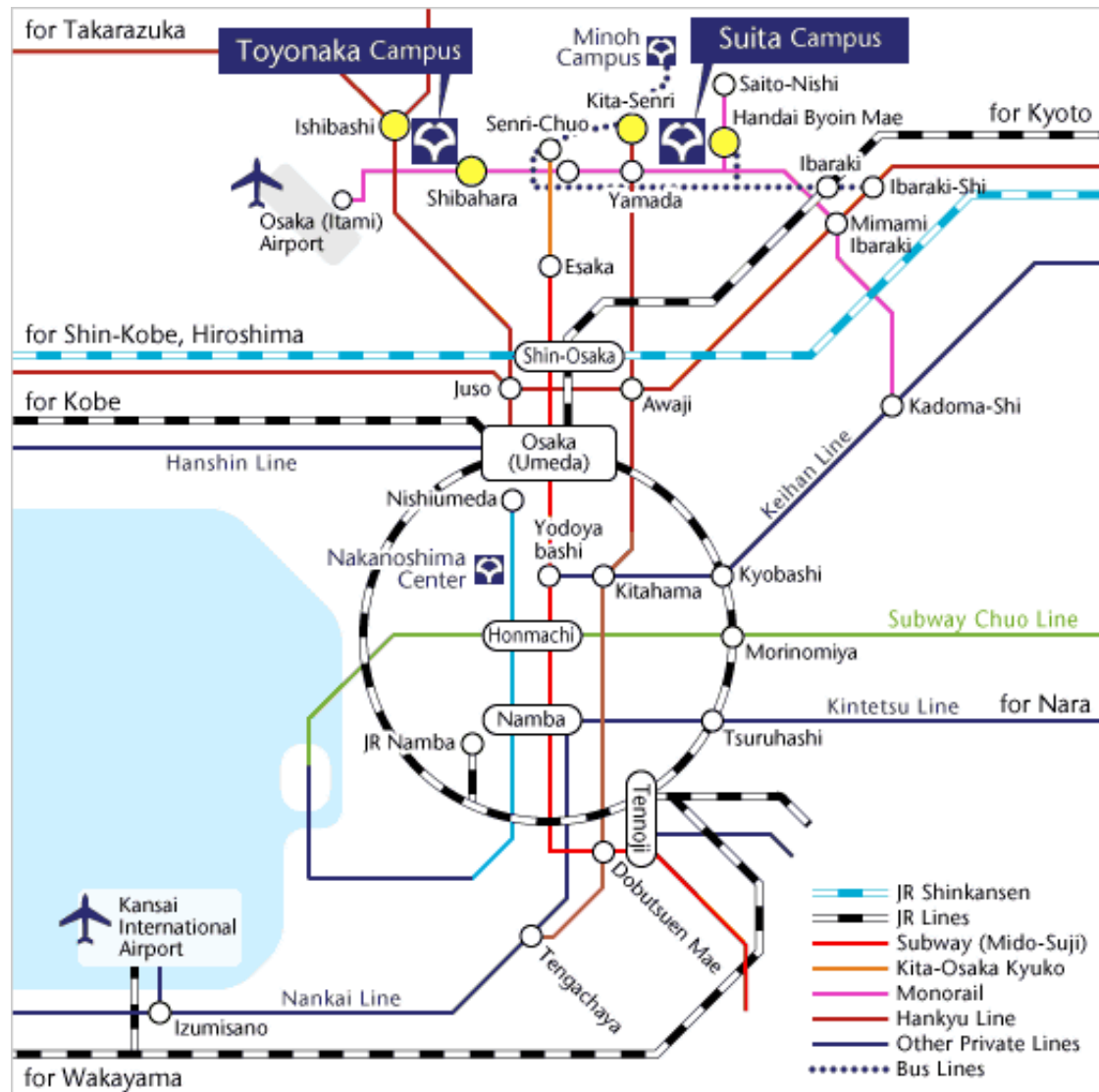


Figure 5: Access map

### 4.1 From Kansai International Airport (KIX)

#### 4.1.1 From KIX to Osaka Umeda, Shin-Osaka or Esaka area

1. Take [Nankai Line](#) to Namba (NK01/M20).

[Rapi:t](#) is a cool-looking limited express with reserved seats only. It leaves once or twice an hour and takes 34-42 minutes to Namba. Buy an ICOCA IC card and a ticket for a reserved seat (+520 JPY) at a ticket counter. The fare is 930 + 520 (for Rapi:t) = 1450 Yen.



Airport Express stops more often and has no reserved seats. It leaves four times an hour and takes 40-50 minutes to Namba. Buy an ICOCA IC card at a ticket counter or a pink ticket vending machine. The fare is 930 Yen.

2. At Namba, walk all the way down to underground to change to **Osaka Metro Midosuji Line** (red line) bound for Senri-Chuo, and get off at your destination. The fare is 230 Yen to Osaka Umeda, and 280 Yen to Esaka.

#### 4.1.2 From KIX to Senri-Chuo area

If the schedule of the limousine bus matches your arrival time, taking the bus is the easiest way.

1. Take a limousine bus operated by **Kansai Airport Transportation Enterprise** bound for Osaka Airport. After exiting the Terminal 1 on the ground level, go to Ticket Window B, check the time table, and buy a ticket to Osaka Airport (2000 Yen). The bus leaves from bus stop 8. It takes about 1.5 hours (usually less than scheduled).
2. At Osaka Airport, walk to **Osaka Monorail** station, and buy an ICOCA IC card.
3. Take any monorail to Senri-Chuo.
4. If you are going to Senri Hankyu Hotel, turn right immediately after exiting the station and walk along the monorail line for 140 m. You will find your hotel on your diagonal left.

If the bus schedule does not work for you, follow the instructions in Section 4.1.1 for KIX to Esaka, and ride all the way to Senri-Chuo. From Namba, it costs 420 Yen and takes 42 minutes.

## 4.2 From Osaka International Airport (ITM)

### 4.2.1 From ITM to Esaka area

1. Buy an ICOCA IC card at a ticket vending machine at **Osaka Monorail** station.
2. Take any monorail to Senri-Chuo. The fare is 340 Yen.
3. At Senri-Chuo, walk straight for 140 m and take escalators down to the **Kita Osaka Kyuko Line** (which connects to Osaka Metro Midosuji Line) station. Take the Kita Osaka Kyuko Line to Esaka (third stop). The fare is 140 Yen.

### 4.2.2 From ITM to Shin-Osaka

1. After exiting the airport terminal, buy a **bus ticket to Shin-Osaka**. The fare is 540 Yen.
2. The bus leaves from bus stop 8. It takes about 25 minutes.

#### 4.2.3 From ITM to Senri-Chuo area

1. Buy an ICOCA IC card at a ticket vending machine at the [Osaka Monorail](#) station.
2. Take any monorail to Senri-Chuo.
3. If you are going to Senri Hankyu Hotel, right after you exit the station, turn right and walk along the monorail line for 140 m. You will find your hotel on your diagonal left.

## 5 Conference Venue and Toyonaka Campus

### 5.1 Conference Venue

The conference will be held at Nambu Hall (marked in the next map) in Osaka University Toyonaka Campus. Note that there are three campuses, Toyonaka, Suita, and Minoh. Should you take a taxi, make sure that you are going to the TO-YO-NA-KA Campus.

### 5.2 Access to the Conference Venue

#### 5.2.1 From Umeda, Shin-Osaka, Esaka on Osaka Metro Midosuji Line

1. Take **Osaka Metro Midosuji Line** (red line) (which changes to **Kita Osaka Kyuko Line** from Esaka) bound for Senri-Chuo (千里中央).
2. At Senri-Chuo, **before** walking upstairs, walk **on the platform** all the way to the **South Exit/Gate**, and then take an escalator up to the gate.
3. Follow the signs for Osaka Monorail (大阪モノレール) and walk up 2 stories, walk south straight for 140 m to the Osaka Monorail Senri-Chuo station. (There is McDonald's on the way.)



4. Follow the instructions in the Section [5.2.2](#)

#### 5.2.2 From Senri-Chuo

1. Enter the gate at **Osaka Monorail** Senri-Chuo station. From Platform 2, take a monorail bound for Osaka Airport.
2. Get off at the second stop, Shibahara Handai-mae (#13).
3. Follow the instructions in Section [5.2.5](#).

#### 5.2.3 From Osaka Airport

1. Enter the gate at the **Osaka Monorail** Osaka Airport station.
2. Take any monorail to the second stop, Shibahara Handai-mae (#13).
3. Follow the instructions in Section [5.2.5](#).

#### 5.2.4 From Toyonaka

1. Take Hankyu Takarazuka Line bound for Takarazuka (宝塚), and get off at Hōtarugaikē (蛍池, HK47).
2. Exit the gate, follow the signs for Osaka Monorail, and enter the monorail station through its gate.
3. Take a monorail bound for Kadoma-shi, and get off at the next stop, Shibahara Handai-mae (#13).
4. Follow the instructions in Section [5.2.5](#).

### 5.2.5 From Shibahara Handai Mae to the Conference Venue

At the Shibahara Handai-Mae station, after exiting the gate at the station, turn left and take an escalator down to the ground, and walk straight ahead. After 50 m, veer right into the Campus. Conference posters with arrows will guide you to the Nambu Hall. The route is also shown in the Campus Map in Section 5.8. The Nambu Hall is 450 m away from the station.

### 5.3 Wi-Fi

Eduroam is available in the Nambu Hall. Another Wi-Fi with SSID `odins-visitor-1x` is also available if you get an ID and a password at the registration desk. Here are the manuals for [Windows](#), [macOS](#), and [iOS](#).

### 5.4 Lunch

Lunch is available at two cafeterias: Laforet (200 m away) and Kasane (600 m away). Other cafeterias are being closed. At Laforet, take a look at samples in a glass case, buy a ticket at a vending machine, and give the ticket at a counter. At Kasane, pick up what you want, and pay at a cashier.

When you eat, keep silence, and wear a mask when you speak.

Lunch packs are also available in the convenience store (Lawson) underneath the Nambu Hall.

### 5.5 ATM

ATMs are available in the campus, as indicated in the campus map. Operating hours are:

ATM1: Cafeteria and Campus Store	8:45 – 19:00
ATM2: Post Office	9:00 – 19:00 .

### 5.6 Post Office

Post Office in the campus is open from 9:00 to 17:00.

### 5.7 Smoking

Smoking is prohibited in the Toyonaka Campus, except at the designated smoking booths. The nearby booths are indicated in the Campus Map.



## 6 Conference

### 6.1 Schedule Overview

#### Sep. 12, Monday

17:00 - 18:00 Registration  
18:00 - 18:40 Concert

#### Sept. 13, Tuesday

9:00 - 18:00 Sessions

#### Sep. 14, Wednesday

9:00 - 12:50 Sessions  
14:00 - 15:20 Poster Session  
15:20 - 18:00 Sessions

#### Sep. 15, Thursday

9:00 - 11:15 Sessions  
12:40 - 18:40 Excursion  
19:00 - 21:00 Conference Dinner

#### Sep. 16, Friday

9:00 - 18:00 Sessions  
18:00 Adjourn

### 6.2 Time Zone

Japan Standard Time (JST) is Universal Time (UTC) + 9 hours. The table below shows some examples. The -1 indicates the previous day. For example, the conference starts at 20:00 on Sep. 12 at BNL (9:00 on Sep. 13 in Japan).

JST	UTC	RAL	CERN	BNL	SLAC/TRIUMF
9:00	0:00	1:00	2:00	20:00 -1	17:00 -1
14:00	5:00	6:00	7:00	1:00	20:00 -1

### 6.3 Links for Remote Participants

The URL links for Zoom (for oral talks) and Gather.town (for poster presentations) will be sent by Email to registered participants who have paid the registration fee, and students attending the Conference remotely.

### 6.4 Instructions to Speakers

The recommended aspect ratio for the slides is 16:9.

#### 6.4.1 On-site speakers

- Send your slides in PDF format to [kaon2022@champ.hep.sci.osaka-u.ac.jp](mailto:kaon2022@champ.hep.sci.osaka-u.ac.jp) no later than 30 minutes before the session starts. We will upload your slides to Indico before 9:00 for the first morning session, and during coffee and lunch breaks for other sessions.

- Present your slide with a common Mac.  
We will download your slides from the indico to the common Mac which is connected to the projector and Zoom. After we open your slides, you can start your presentation. A laser pointer with remote slide control is available.
- If you want to use your own Mac/PC ...  
Connect your Mac/PC to the Conference Zoom and share your slides. Please mute your microphone and turn off your speaker. The audio will be handled by our system.
- Keep your time.  
The allocated time includes 5 minutes for discussion. A bell will ring at half into your presentation time (10 minutes for 20+5 minute talks, and 15 minutes for 30+5 minute talks), 5 minutes before the end of your presentation, and at the end.

#### 6.4.2 Remote speakers

- Send your slides in PDF format to [kaon2022@champ.hep.sci.osaka-u.ac.jp](mailto:kaon2022@champ.hep.sci.osaka-u.ac.jp) no later than 30 minutes before the session starts. We will upload your slides to Indico before 9:00 for the first morning session, and during coffee and lunch breaks for other sessions.
- Present your slide via Zoom.  
Enable your microphone, and share your slides. Enabling your video camera is preferable so that people can get to know you. Check your audio and video before the first morning session or during breaks.
- Keep your time.  
The allocated time includes 5 minutes for discussion. A bell will ring at half into presentation your time (10 minutes for 20+5 minute talks, and 15 minutes for 30+5 minute talks), 5 minutes before the end of your presentation, and at the end.

### 6.5 Instructions for the Poster Session

We will have a poster session in a real hybrid style, merging real and virtual worlds together. All the posters will be posted on-site and online, regardless of where the presenters are. Each poster panel will be equipped with an iPad mini serving as a window between on-site and remote participants. With [Gather.town](#), remote participants can “walk up” to a poster and have discussions with a presenter who may be on-site or on network. On-site participants can also walk up to a poster in a traditional way and have discussions with a presenter who may be on this side or the other side of the iPad mini.

#### 6.5.1 Remote participants

1. Launch Google Chrome or Firefox (Gather on Safari is still in beta) and connect to the URL which were sent to you by Email.
2. Allow access to audio at least.
3. Enter your name and click  button.
4. To navigate, double click your destination, or use arrow keys.

5. To look at the poster in front of you, press “x” key on your keyboard. Press “x” key again to stop looking at the poster.
6. You can communicate only with people in the same private spot (near a poster or a table).
7. Quick tutorial is posted on “information panels”.
8. The list of posters is available on p.23.

### 6.5.2 On-site poster presenters

- Prepare a poster in A0 size (841 mm × 1189 mm) in portrait orientation.
- Send your poster in PDF format by September 8th (Japan time) to [kaon2022@champ.hep.sci.osaka-u.ac.jp](mailto:kaon2022@champ.hep.sci.osaka-u.ac.jp).
- Bring a printed poster and post it during the lunch break on Sep. 14.
- Your poster board is indicated by the ID shown in Table. 1.
- We will post your posters on Gather.town for you.

### 6.5.3 Remote poster presenters

- Prepare a poster in A0 size (841 mm × 1189 mm) in portrait orientation.
- Send your poster in PDF format by September 8th (Japan time) to [kaon2022@champ.hep.sci.osaka-u.ac.jp](mailto:kaon2022@champ.hep.sci.osaka-u.ac.jp).
- Before the poster session begins, connect to the Gather.town link with a web browser.
- We will post your posters on Gather.town for you.
- At the time of the poster session, “stand” next to your poster. You will see on-site participants through iPad mini. Turn on your camera if possible. Remote participants will look like characters in video games, but they are real.

## 6.6 Social Events

### 6.6.1 Sep. 12 evening: Reception and Concert

We welcome you to a simple reception and a concert in the evening of Sep. 12.. This will be a good chance to get to know how to come to the Conference venue (Nambu Hall) beforehand.

From 17:00 to 18:00, we will have the registration desk opened, and will offer some drinks and appetizers.

From 18:00 till 18:30, we will have a Japanese concert in the Nambu Hall with Shakuhachi (bamboo flute), Koto (Japanese harp), and violins played by students in Osaka University.



### 6.6.2 Sep. 15 afternoon and evening: Excursion and Conference Dinner

We will visit the world heritage **Todai-ji** in Nara for an excursion. We will leave the Nambu Hall on 12:20, and leave Toyonaka Campus on 12:40. We will walk through Nandai-Mon (The Great South Gate with large guardians sculptured back in 13th century), Daibutsu-den (The Great Buddha Hall), Bell Tower, Nigatsu-do (with a good view of Nara city), Sangatsu-do, and Todai-ji Museum.

If you get lost, come to the Todai-ji Museum by 17:10. If you get really lost, call Mr. Uegaki (our tour guide) at 080-2459-1813.

After the excursion, the bus will take us to the Conference Dinner at **Shin-Hankyu Hotel** in Umeda. A full-course Japanese style dinner will start at 19:00.

The Conference Dinner site is located right next to the Osaka Metro Umeda station. You can just take the Metro to go back to your hotel. (Sorry, no bus service is available.)

## 6.7 Proceedings

Contributions to this conference will be peer-reviewed and published online in the Journal of Physics: Conference Series from IOP Publishing.

The deadline for submission of the contributions to the conference proceedings is **October 31, 2022**. Details will be given later.

## 7 Scientific Program

# Scientific Program

Osaka	UTC	RAL	CERN	BNL	SLAC/TRIUMF
9:00	0:00	1:00	2:00	20:00 -1	17:00 -1
14:00	5:00	6:00	7:00	1:00	20:00 -1

The -1 indicates the previous day. For example, the conference starts at 20:00 on Sep. 12 at BNL (9:00 on Sep. 13 in Japan).

Date	Chairpersons	
	morning session	afternoon session
Sep. 13	Yau Wah	Cristina Lazzeroni
Sep. 14	Giancarlo D'Ambrosio	Yee Bob Hsiung
Sep. 15	Rainer Wanke	
Sep. 16	Tadashi Nomura	Mauro Piccini

### 7.1 Oral Presentations

# Sep. 13 (Day 1)

9:00			
	10	Welcome <span style="float: right;"><i>Taku Yamanaka</i></span> Overview of Kaon Physics <span style="float: right;"><i>Jason Aebischer</i></span>	Rare K decays
10:00	45	Measurement of the very rare $K^+ \rightarrow \pi^+ \nu \bar{\nu}$ decay at the NA62 experiment <span style="float: right;"><i>Francesco Brizioli</i></span>	
	10	Status of the NA62 experiment at CERN <span style="float: right;"><i>Cristina Lazzeroni</i></span>	
	35	Search for the $K_L \rightarrow \pi^0 \nu \bar{\nu}$ decay at the J-PARC KOTO experiment <span style="float: right;"><i>Koji Shiomi</i></span>	
11:00		Coffee Break	
	30	Standard Model predictions for CP violating and rare Kaon decays <span style="float: right;"><i>Martin Gorbahn</i></span>	
12:00	55	Lattice QCD calculations of rare kaon decays <span style="float: right;"><i>Xu Feng</i></span>	
	20	Implications of $b \rightarrow s \mu \mu$ Anomalies for Future Measurements of $B \rightarrow K^{(*)} \nu \bar{\nu}$ and $K \rightarrow \pi \nu \bar{\nu}$ <span style="float: right;"><i>Martin Novoa-Brunet</i></span>	
13:00	45	Lunch Break	
14:00		Strange processes in general 2HDM <span style="float: right;"><i>Girish Kumar</i></span>	
	25	Leptonic and semileptonic kaon decays and neutral kaon mixing from lattice QCD <span style="float: right;"><i>Takashi Kaneko</i></span>	CKM matrix
15:00	25	Kaon semileptonic form factors at the physical quark masses on large volumes in Nf=2+1 lattice QCD <span style="float: right;"><i>Takeshi Yamazaki</i></span>	
	25	Coffee Break	
16:00	55	QED x QCD matching between the MS-bar and the RI schemes <span style="float: right;"><i>Francesco Moretti</i></span>	
	20	Sterile neutrinos in light of the Cabibbo-angle anomaly <span style="float: right;"><i>Tepei Kitahara</i></span>	
17:00	45	Covariant flavour effects in semileptonic K and D decays <span style="float: right;"><i>Nejc Kosnik</i></span>	Semileptonic decays
	10	A new $K_S \rightarrow \pi e \nu$ branching fraction measurement from KLOE-2 <span style="float: right;"><i>Erika De Lucia</i></span>	
18:00			

# Sep. 14 (Day 2)

9:00		<i>Filippo Mazzetti</i>	
	Radiative Kaon Decays		Radiative K decays
25	Measurement of structure dependent radiative $K^+ \rightarrow e^+ \nu \gamma$ decays using stopped positive kaons	<i>Suguru Shimizu</i>	
10:00	50 Measurement of the radiative decay $Ke3g$ at the NA62 experiment	<i>Mauro Piccini</i>	
15	Study of the rare decay $K^+ \rightarrow \pi^+ \gamma \gamma$ at the NA62 experiment	<i>Artur Shaikhiev</i>	
11:00	40 Coffee Break		
10	Radiative modes $K \rightarrow \pi \gamma^* \gamma^{(*)}$ and the $K \rightarrow \pi 4e$ decay	<i>Tomas Husek</i>	
12:00	35 Measurement of the rare decay $K^+ \rightarrow \pi^+ \mu^+ \mu^-$ at the NA62 experiment	<i>Michal Koval</i>	
25	RD Search for $K_{S(L)} \rightarrow \mu \mu \mu \mu$ at the LHC	<i>Miguel Fernández Gómez</i>	
13:00	50 First measurement of the $K^\pm \rightarrow \pi^0 \pi^0 \mu^\pm \nu$ decay	<i>Anna Korotkova</i>	Semileptonic decays
	Group Photo		
	Lunch Break		
14:00	Poster Session		
15:00	20 Direct CP violation in $K \rightarrow \pi \pi$ decay on the lattice with periodic boundary conditions	<i>Masaaki Tomii</i>	CP, T, and CPT violations
16:00	55 Two-loop Electroweak Corrections to $\epsilon_K$	<i>Sandra Kvedaraitė</i>	
20	A direct test of the T and CPT symmetries in transitions of neutral kaons with KLOE data	<i>Antonio Di Domenico</i>	
17:00	45 Searches for lepton flavour and lepton number violating $K^+$ decays at the NA62 experiment	<i>Jan Jerhot</i>	Lepton number violation
10	Kaons at LHCb	<i>Diego Martinez Santos</i>	
18:00	35 Kaonic atoms with SIDDHARTA-2 at the DAFNE collider	<i>Francesco Sgaramella</i>	Hadron Physics

# Sep. 15 (Day 3)

9:00			
	Overview of Flavor Physics	<i>Gino Isidori</i>	Flavor physics in neighbors
35	B Physics Experiments	<i>Takeo Higuchi</i>	
10:00	Rare decays at LHCb	<i>Marco Santimaria</i>	
25	Neutrino Physics Experiments	<i>Ken Sakashita</i>	
11:00	Muon Physics Experiments	<i>Chris Polly</i>	
15	Lunch Break		
12:00	Excursion (-18:40) and Conference Dinner (19:00-21:00)		
40			
13:00			
14:00			
15:00			
16:00			
17:00			
18:00			

# Sep. 16 (Day 4)

9:00			
	25	Precision tests of Quantum Mechanics and CPT symmetry with entangled neutral kaons at KLOE	<i>Riccardo D'Amico</i>
			Quantum Mechanics
	50	Can future observation of the living partner post-tag the past decayed state in entangled neutral K-mesons ?	<i>Antonio Di Domenico</i>
10:00		Light new particles at the kaon experiments	<i>Kohsaku Tobioka</i>
	15	Some Theoretical Aspects of Searches for Heavy Neutrino Emission in Kaon Decays	<i>Robert Shrock</i>
	40	Coffee Break	
11:00			Exotic particles
	10	Search for Light Neutral Bosons in the TREK/E36 Experiment with Stopped $K^+$ Mesons	<i>Bishoy DH Dongwi</i>
	35	Searches for the light invisible hypothetic pseudoscalar in $K^+ \rightarrow \pi^+ \pi^0 P$ decay	<i>Alexander Sadovskiy</i>
12:00		Search for Pair Production of Dark Particles in $K_L^0$ Decays at KOTO	<i>Chieh Lin</i>
	25	First results for searches of exotic decays with NA62 in beam-dump mode	<i>Tommaso Spadaro</i>
13:00		Lunch Break	
	30	IAC Meeting at B102	<i>Taku Yamanaka</i>
14:00			
	30	$K \rightarrow \mu^+ \mu^-$ as a Third Kaon Golden Mode	<i>Avital Dery</i>
15:00		First thoughts on high intensity $K_S$ experiment	<i>Radoslav Marchevski</i>
	20	Lepton flavor violation experiment: PIONEER	<i>Elizabeth Worcester</i>
	45	Coffee Break	
16:00		High Intensity Kaon Experiments (HIKE) at the CERN SPS	<i>Matthew Moulson</i>
	40	KOTO step-2 at J-PARC toward measurement of branching ratio of $K_L \rightarrow \pi^0 \nu \bar{\nu}$	<i>Hajime Nanjo</i>
17:00		The future prospects of kaon physics	<i>Jure Zupan</i>
	40	Closing	<i>Taku Yamanaka</i>
18:00			Future Perspectives

## 7.2 Poster Session

Sep. 14, 14:00 - 15:20

Table 1: **List of posters**

ID	Title	Name
0	A new era of experimental studies on the $\bar{K}N$ interaction.	Oton Vazquez Doce
1	Online event selection and GPU-based waveform compression for the High Level Trigger of the KOTO experiment	Mario Gonzalez
2	Measurement of residual mu+ polarization in various scintillating materials to search for T-violating mu+ polarization in $K^+ \rightarrow \pi^0 \mu^+ \nu$ decay	Keito Horie
3	A three-dimensional sampling electromagnetic calorimeter for the KOTO2 experiment with the future extension of J-PARC Hadron Facility	YoungJun Kim
4	Development of a PMT base used for an in-beam charged particle detector for the J-PARC KOTO experiment	Ayumu Kitagawa
5	Estimation of Hadron shower background in KOTO 2019 - 2021 data	Katsushige Kotera
6	Effect of low-energy neutrons on accidental counting rate in the KOTO experiment	Toru Matsumura
7	Heavy New Physics in Rare Kaon Decays	Ulserik Moldanazarova
8	Effective theory for universal seesaw model ,FCNC and CP violation	Takuya Morozumi
9	Evidence for the Chiral WZW anomaly in the coherent production of $(K^+ \pi^0)$ -system by $K^+$ beam on copper nuclei	Vladimir Obraztsov
10	Thin scintillation counter with a new readout method for the KOTO experiment	Keita Ono
11	Study of Weak Basis Invariant in the Universal Seesaw Model using Hilbert Series	Albertus Panuluh
12	Nuclear resonance effects in kaonic atoms	Luca De Paolis
13	Data Acquisition System Upgrade at KOTO	Joseph Redeker
14	Reduction of charged kaon background in the KOTO experiment	Ryota Shiraishi
15	Baryon number violation from confining New Physics	Mathew Thomas
16	Investigating the Strong Interaction with Kaonic Atoms - The SIDDHARTA-2 Experiment	Marlene Tuechler
17	Analysis Techniques for Neutron Background Suppression at KOTO.	Yu-Chen Tung
18	$K_L^0 \rightarrow \gamma + dark\ photon(\tilde{\gamma})$ Search at the J-PARC KOTO Experiment	Tong Wu

## 8 Participants List

	first name	last name	affiliation / Email address	part.
1	Muhammad Ibrahim	Abdulhamid	Faculty of Science, Tanta University	remote
2	Jason	Aebischer	University of Zurich	remote
3	Atakan Tugberk	Akmete	University of Mainz	remote
4	Brian	Beckford	U.S Department of Energy	remote
5	Nicholas	Benoit	Hiroshima University	remote
6	Lubos	Bician	Charles University	remote
7	Cristina	Biino	INFN	remote
8	Francesco	Brizioli	CERN	remote
9	Joachim	Brod	University of Cincinnati	remote
10	Douglas	Bryman	UBC/TRIUMF	remote
11	Andrzej	Buras	TUM-IAS	remote
12	Patrizia	Cenci	INFN Perugia	remote
13	Giancarlo	D'Ambrosio	INFN Sezione di Napoli	on-site
14	Riccardo	D'Amico	University of Ferrara & INFN	remote
15	hans	danielsson	CERN	remote
16	Erika	De Lucia	INFN	remote
17	Luca	De Paolis	Laboratori Nazionali di Frascati - INFN	remote
18	Avital	Dery	Cornell University	remote
19	Antonio	Di Domenico	Sapienza University of Rome and INFN-RM1	remote
20	Bishoy DH	Dongwi	LLNL	remote
21	Xu	Feng	Peking University	remote
22	Miguel	Fernández Gómez	Instituto Galego de Fisica de Altas En- erxias (IGFAE)	on-site
23	Mario	Gonzalez	Osaka University	on-site
24	Martin	Gorbahn	University of Liverpool	on-site
25	Takeo	Higuchi	Kavli IPMU	remote
26	Keito	Horie	Osaka University	on-site
27	George W.S.	Hou	National Taiwan University	remote
28	Yee Bob	Hsiung	National Taiwan University	on-site
29	Tomas	Husek	Lund University	on-site
30	Gino	Isidori	University of Zurich	remote
31	Jan	Jerhot	CP3 UCLouvain	on-site
32	Takashi	Kaneko	KEK	on-site
33	Yuto	Kawata	Osaka University	on-site
34	Junlee	Kim	Jeonbuk National University	remote
35	Ayumu	Kitagawa	Osaka University	on-site
36	Teppej	Kitahara	Nagoya University	on-site
37	Takeshi	Komatsubara	KEK-IPNS / J-PARC	remote
38	Anna	Korotkova	JINR	remote
39	Nejc	Kosnik	Jozef Stefan Institute and University of Ljubljana	on-site
40	Katsushige	Kotera	Osaka University	on-site
41	Michal	Koval	Charles University	on-site
42	Girish	Kumar	National Taiwan University	on-site



43	Victor	Kurshetsov	Institute for High Energy Physics	remote
44	Sandra	Kvedaraite	University of Cincinnati	on-site
45	Cristina	Lazzeroni	University of Birmingham (GB)	on-site
46	GeiYoub	Lim	IPNS/KEK	on-site
47	Chieh	Lin	University of Chicago	on-site
48	Laurence	Littenberg	Brookhaven National Laboratory	remote
49	Yuting	Luo	The University of Chicago	remote
50	Radoslav	Marchevski	Weizmann Institute of Science	on-site
51	Diego	Martinez Santos	GAIN	on-site
52	Karim	Massri	CERN	remote
53	Toru	Matsumura	National Defense Academy of Japan	remote
54	Filippo	Mazzetti	Roma Tre University	remote
55	Ulserik	Moldanazarova	Karaganda Buketov University	on-site
56	Francesco	Moretti	University of Liverpool	on-site
57	Takuya	Morozumi	Hiroshima University	on-site
58	Matthew	Moulson	INFN Laboratori Nazionali di Frascati	remote
59	Tsuyoshi	Nakaya	Kyoto University	on-site
60	Hajime	Nanjo	Osaka University	on-site
61	Tadashi	Nomura	KEK/J-PARC	on-site
62	Martin	Novoa-Brunet	INFN Sezione di Bari	on-site
63	Vladimir	Obraztsov	Institute for High Energy Physics (IHEP), Protvino	remote
64	Keita	Ono	Osaka University	on-site
65	Albertus	Panuluh	Hiroshima University	remote
66	Jeongwoo	Park	Jeonbuk National Univ.	remote
67	Monica	Pepe	INFN Perugia (IT)	on-site
68	Letizia	Peruzzo	Johannes Gutenberg University Mainz	remote
69	Mauro	Piccini	INFN - Perugia	on-site
70	Chris	Polly	Fermilab	remote
71	Mauro	Raggi	INFN Roma Sapienza	on-site
72	Joseph	Redeker	University of Chicago	on-site
73	Alexander	Sadovskiy	Institute for High Energy Physics (Protvino)	remote
74	Naohito	Saito	IPNS, KEK	on-site
75	Ken	Sakashita	KEK/J-PARC	on-site
76	Jack	Sanders	University of Birmingham	remote
77	Marco	Santimaria	INFN - LNF	on-site
78	Alessandro	Scordo	Laboratori Nazionali di Frascati - INFN	remote
79	Francesco	Sgaramella	INFN-LNF	remote
80	Artur	Shaikhiev	University of Birmingham	remote
81	Teppei	Shibata	Osaka university	on-site
82	Suguru	Shimizu	Osaka University	on-site
83	Koji	Shiomi	KEK	on-site
84	Ryota	Shiraishi	Osaka University	on-site
85	Robert	Shrock	Stony Brook University	remote
86	Tommaso	Spadaro	Istituto Nazionale di Fisica Nucleare	remote
87	Toshi	Sumida	Kyoto University	on-site
88	Yasuhisa	Tajima	Yamagata University	on-site
89	Mathew	Thomas	Indian Institute of Science Education and Research, Thiruvananthapuram	remote

90	Kohsaku	Tobioka	Florida State University	remote
91	Masaaki	Tomii	UConn	on-site
92	Marlene	Tuechler	Stefan Meyer Institute	remote
93	YU-CHEN	TUNG	National Taiwan University	remote
94	Oton	Vazquez Doce	INFN (Frascati)	on-site
95	Yau	Wah	University of Chicago	on-site
96	Rainer	Wanke	University of Mainz	on-site
97	Hiroaki	Watanabe	KEK/J-PARC	remote
98	Elizabeth	Worcester	Brookhaven National Lab	on-site
99	Tong	Wu	National Taiwan University	on-site
100	Kei	Yamamoto	Hiroshima Institute of Technology	on-site
101	Taku	Yamanaka	Osaka University	on-site
102	Takeshi	Yamazaki	University of Tsukuba	on-site
103	Yiheng	Ye	University of Chicago	remote
104	Jure	Zupan	University of Cincinnati	remote

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## 9 Contacts

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Secretariat Email		<code>kaon2022@champ.hep.sci.osaka-u.ac.jp</code>
phone	080-8838-3920	(24h, from Sep. 10 to 19)
Police	110	
Ambulance	119	

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To call from outside Japan, strip off the first 0, and add the Japan's country code +81.

Example: 080-8838-3920 → +81-80-8838-3920 .

## 10 Survival Japanese

### 10.1 Useful Expressions (These are all you need to know!)

Thank you.	<b>Arigato</b> [ah-ri-gah-toe]
Thanks.	<b>Doumo</b> [Dough-moh] Usually, this is good enough to thank waiter/waitress and shop attendants. This literally means “very much”, a part of Doumo Arigato for “Thank you very much”.
Excuse me.	<b>Sumimasen</b> [Sue-me-mah-sen] Just as in English, you can use this to draw attention or to apologize somebody.
Hello.	<b>Kon-nichiwa</b> [Kon-nichi-wa]
Toilet	<b>Toilet</b> [toy-le] Pronouncing toilet in English is good enough.
Where is ... ?	<b>... wa doko desuka?</b> [... wa dough-ko des-ka?] Example: Toilet wa doko desuka?
beer	<b>[bee-ru]</b>
..., please	<b>..., onegai shimasu</b> [Oh-nay-guy she-mass] This is a very useful and polite expression. For example, if you want to buy something at a shop, just point to it and say “Onegai Shimasu.” If you want to go to XXX Hotel by taxi, just say “XXX Hotel, onegai shimasu.” If you want beer, just say “Bee-ru, onegai shimasu.”

### 10.2 Numbers in Kanji (Chinese characters)

Sometimes, menus are written vertically, and in that case, the price may be written vertically in Kanji.

○	一	二	三	四	五	六	七	八	九	円
0	1	2	3	4	5	6	7	8	9	Yen

Example: 八 = 850 Yen  
五  
○  
円

### 10.3 Signs in Kanji

非常口	Emergency Exit
出口	Exit
トイレ、洗面所	Restroom
地下鉄	Subway
モノレール	Monorail
不織布 マスク	nonwoven fabric mask

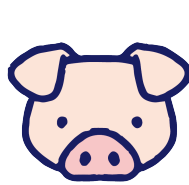
## 10.4 Special Diet

Just point to a line below.

I am a vegetarian. 私は菜食主義者です。

Does this contain meat? これに肉は入ってますか。

beef / pork / chicken 牛肉 / 豚肉 / 鶏肉



Does this contain fish? これに魚は入ってますか。

Does this contain egg? これに卵は入ってますか。

Does this contain milk? これにミルクは入ってますか。