# -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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- 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 to need a pre-departure PCR test. The vaccine certificate should indicate the name of the three vaccines. For details, please refer to <a href="https://www.mhlw.go.jp/stf/covid-19/border\_vaccine.html">https://www.mhlw.go.jp/stf/covid-19/border\_vaccine.html</a>.

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 or yellow screen on your smartphone.

#### 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

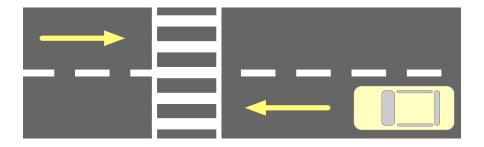


Figure 3: Watch out for cars coming from your right.

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 2000 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).

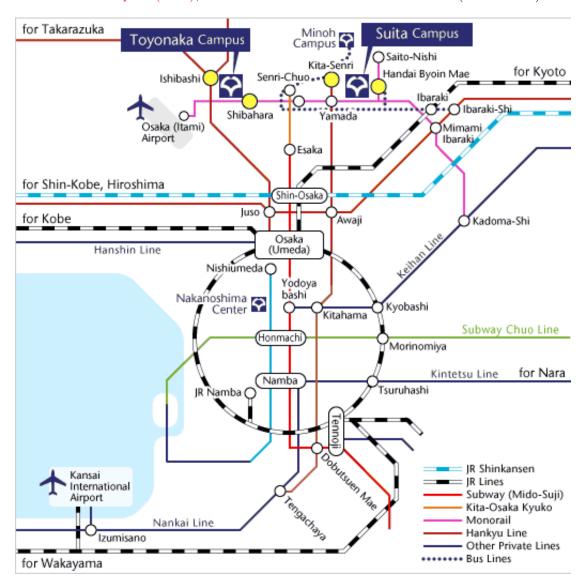


Figure 5: Access map

#### 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 Hotarugaike (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 - 19:00ATM2: Post Office 9:00 - 19:00.

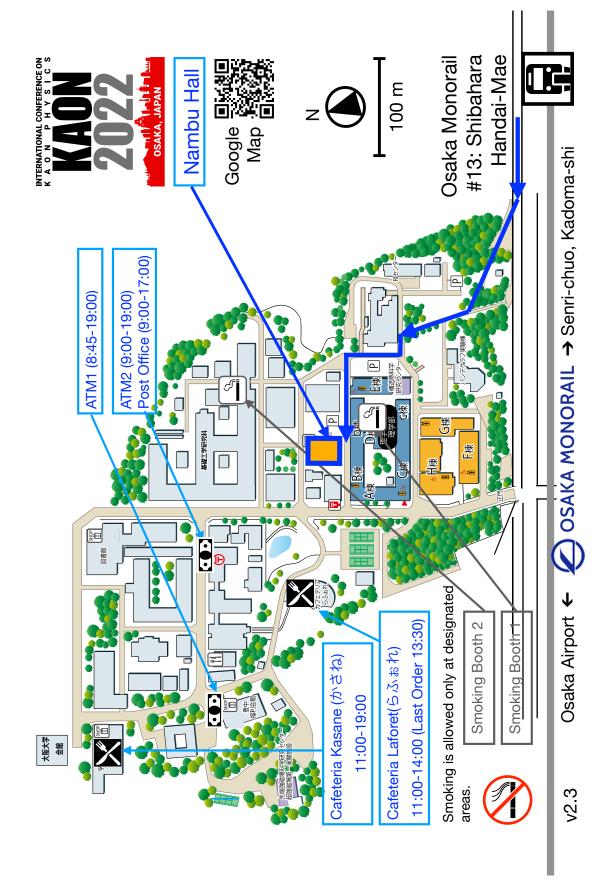
#### 5.6 Post Office

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.

#### 5.8 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 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.
- 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 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

Connect to an URL which will be sent to you by Email. Click the poster icon to view the poster.

#### 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.
- 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.
- 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. 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.

## 7 Scientific Program

## Scientific Program

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

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).

9:00		Sep. 13 (Day 1)		
	10	Welcome	Taku Yamanaka	
	10	Overview of Kaon Physics	Jason Aebischer	Rare K decays
10:00	45	Status of the NA62 experiment at CERN	Cristina Lazze- roni	
	10	Measurement of the very rare $K^+ \to \pi^+ \nu \overline{\nu}$ decay at the NA62 experiment	Francesco Brizioli	
11:00	35	Search for the $K_L \to \pi^0 \nu \overline{\nu}$ decay at the J-PARC KOTO experiment	Koji Shiomi	
		Coffee Break		
	30	Standard Model predictions for CP violating and rare Kaon decays	Martin Gorbahn	
12:00	55	Lattice QCD calculations of rare kaon decays	Xu Feng	
	20	Implications of $b \to s\mu\mu$ Anomalies for Future Measurements of $B \to K^{(*)}\nu\bar{\nu}$ and $K \to \pi\nu\bar{\nu}$	Martin Novoa- Brunet	
3:00	45	Lunch Break		
14:00		Ci Loudow	Ciril Kuman	
	25	Strange processes in general 2HDM	Girish Kumar	<u> </u>
5:00		Leptonic and semileptonic kaon decays and neutral kaon mixing from lattice QCD	Takashi Kaneko	CKM matrix
		Kaon semileptonic form factors at the physical quark	Takeshi Ya-	
	25	masses on large volumes in Nf=2+1 lattice QCD	mazaki	
C 00	25	Coffee Break	mazaki	
6:00	55		mazaki Francesco Moretti	
6:00	55 20	Coffee Break  QED x QCD matching between the MS-bar		
	55 20 45	Coffee Break  QED x QCD matching between the MS-bar and the RI schemes	Francesco Moretti	Semileptor decays
6:00 7:00	55 20	Coffee Break  QED x QCD matching between the MS-bar and the RI schemes  Sterile neutrinos in light of the Cabibbo-angle anomaly	Francesco Moretti Teppei Kitahara	Semileptor decays

9:00		Sep. 14 (Day 2)		
	25	Radiative Kaon Decays	Filippo Mazzetti	Radiative K decays
	25	Measurement of structure dependent radiative $K^+ \to e^+ \nu \gamma$ decays using stopped positive kaons	Suguru Shimizu	
10:00	50	Measurement of the radiative decay Ke3g at the NA62 experiment	Mauro Piccini	
	15	Measurement of the $K^+ \to \pi^0 \mu^+ \nu_\mu \gamma$ decay with OKA setup	Victor Kur- shetsov	4
11:00	40	Coffee Break		4
	10	Radiative modes $K \to \pi \gamma^* \gamma^{(*)}$ and the $K \to \pi 4e$ decay	Tomas Husek	
12:00	35	Study of the rare decay $K^+ \to \pi^+ \gamma \gamma$ at the NA62 experiment	Artur Shaikhiev	<b>4</b>
	05	Measurement of the rare decay $K^+ \to \pi^+ \mu^+ \mu^-$ at the NA62 experiment	Michal Koval	
	25	RD Search for $K_S(L) \to \mu\mu\mu\mu$ at the LHC	Miguel Fernández Gómez	
13:00	50	Group Photo		5
14:00		Poster Session		
15:00				
10.00	20	Direct CP violation in $K \to \pi\pi$ decay on the lattice with periodic boundary conditions	Masaaki Tomii	CP,T, and CPT violations
16:00	55	Two-loop Electroweak Corrections to $\epsilon_K$	Sandra Kvedaraite	4
	20	A direct test of the T and CPT symmetries in transitions of neutral kaons with KLOE data	Antonio Di Domenico	۲
17:00	45	Searches for lepton flavour and lepton number violating $K^+$ decays at the NA62 experiment	Jan Jerhot	Lepton number
	10	Kaons at LHCb	Diego Martinez Santos	₹ violation ?
18:00	35	Kaonic atoms with SIDDHARTA-2 at the DAFNE collider	Francesco Sgaramella	Hadron Physics

9:00		Sep. 15 (D	(ay 3)	
		Overview of Flavor Physics	Gino Isidori	Flavor physics in neighbors
10:00	35	B Physics Experiments	Takeo Higuchi	
	25	Rare decays at LHCb	Marco Santi- maria	
11:00	50	Neutrino Physics Experiments	Ken Sakashita	_
11.00	15	Muon Physics Experiments  Lunch Break	Chris Polly	
		Lunch Break		
12:00				
	40			
13:00		Excursion (-18:40) and Confierence Dinner	(19:00–21:00)	
14:00				
15:00				
16:00				
17.00				
17:00				
18:00				

9:00		Sep. 16 (Day 4)			
	2-	Precision tests of Quantum Mechanics and CPT symmetry with entangled neutral kaons at KLOE	Riccardo D'Amico	Quantum Mechanics	
	25	Can future observation of the living partner post-tag the past decayed state in entangled neutral K-mesons?	Antonio Di Domenico		
10:00	50	Light new particles at the kaon experiments	Kohsaku Tobioka	Exotic particles	
	15	Some Theoretical Aspects of Searches for Heavy Neutrino Emission in Kaon Decays	Robert Shrock	r	
11:00	40	Coffee Break			
	10	Search for Light Neutral Bosons in the TREK/E36 Experiment with Stopped $K^+$ Mesons	Bishoy DH Dongwi		
12:00	35	Searches for the light invisible hypothetic pseudoscalar in $K^+ \to \pi^+ \pi^0 P$ decay	Alexander Sadovskiy		
		Search for Pair Production of Dark Particles in $K_L^0$ Decays at KOTO	Chieh Lin		
	25	First results for searches of exotic decays with NA62 in beam-dump mode	Patrizia Cenci		
13:00	50	Lunch Break			
14:00		30 IAC Meeting at B102	Taku Yamanaka		
	30	$K \to \mu^+ \mu^-$ as a Third Kaon Golden Mode	Avital Dery	Future Perspec-	
15:00	55	First thoughts on high intensity $K_S$ experiment	Radoslav Marchevski	tives	
	20	Lepton flavor violation experiment: PIONEER	Elizabeth Worces- ter		
16:00	45	Coffee Break			
	15	High Intensity Kaon Experiments (HIKE)	Matthew Moulson		
17:00	40	at the CERN SPS  KOTO step-2 at J-PARC toward measurement of	Hajime Nanjo		
	5	branching ratio of $K_L \to \pi^0 \nu \overline{\nu}$ The future prospects of kaon physics	Jure Zupan		
	40	Closing	Taku Yamanaka	)	
18:00				-	

Table 1: List of posters

ID	Title	Name
0	A new era of experimental studies on the $\overline{\mathrm{KN}}$ interaction.	Oton Vazquez Doce
1	Online event selection and GPU-based waveform compression	Mario Gonzalez
	for the High Level Trigger of the KOTO experiment	
2	Measurement of residual mu+ polarization in various scintil-	Keito Horie
	lating materials to search for T-violating mu+ polarization in	
	$K^+ \to \pi^0 \mu^+ \nu \text{ decay}$	
3	A three-dimensional sampling electromagnetic calorimeter for	YoungJun Kim
	the KOTO2 experiment with the future extension of J-PARC	
	Hadron Facility	A T7*1
4	Development of a PMT base used for an in-beam charged	Ayumu Kitagawa
-	particle detector for the J-PARC KOTO experiment	V-4
5	Estimation of Hadron shower background in KOTO 2019 - 2021 data	Katsushige Kotera
6	Effect of low-energy neutrons on accidental counting rate in	Toru Matsumura
U	the KOTO experiment	1014 Watsumara
7	Heavy New Physics in Rare Kaon Decays	Ulserik Moldanazarova
8	Effective theory for universal seesaw model ,FCNC and CP	Takuya Morozumi
	violation	v
9	Evidence for the Chiral WZW anomaly in the coherent pro-	Vladimir Obraztsov
	duction of $(K^+\pi^0)$ -system by $K^+$ beam on copper nuclei	
10	Thin scintillation counter with a new readout method for the	Keita Ono
	KOTO experiment	
11	Study of Weak Basis Invariant in the Universal Seesaw Model	Albertus Panuluh
	using Hilbert Series	
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 experi-	Ryota Shiraishi
15	ment Baryon number violation from confining New Physics	Mathew Thomas
$\frac{15}{16}$	Investigating the Strong Interaction with Kaonic Atoms - The	Marlene Tuechler
10	SIDDHARTA-2 Experiment	Manene Tuccinei
17	Analysis Techniques for Neutron Background Suppression at	Yu-Chen Tung
	KOTO.	14 Onon 14mg
18	$K_L^0 \to \gamma + dark \ photon(\bar{\gamma})$ Search at the J-PARC KOTO Ex-	Tong Wu
	periment	5

## 8 Participants List

	first name	last name	affiliation / Email address	part.
1	Muhammad	Abdulhamid	Faculty of Science, Tanta University	remote
	Ibrahim			
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	$\operatorname{remote}$
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 Enerxias (IGFAE)	on-site
23	Mario	Gonzalez	Osaka University	on-site
24	Martin	Gorbahn	University of Livepool	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	YoungJun	Kim	Korea University	on-site
36	Ayumu	Kitagawa	Osaka University	on-site
37	Teppei	Kitahara	Nagoya University	on-site
38	Takeshi	Komatsubara	KEK-IPNS / J-PARC	remote
39	Anna	Korotkova	JINR	remote
40	Nejc	Kosnik	Jozef Stefan Institute and University of Ljubljana	on-site
41	Katsushige	Kotera	Osaka University	on-site
42	Michal	Koval	Charles University	on-site

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

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

## 9 Contacts

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

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

Example: 080-8838-3920  $\to +81\text{-}80\text{-}8838\text{-}3920$  .

#### 10 Survival Japanese

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

Thank you. **Arigato** [ah-ri-gah-toe] Thanks. **Doumo** [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. Sumimasen [Sue-me-mah-sen]

Just as in English, you can use this to draw attention or to apol-

ogize somebody.

Hello. Kon-nichiwa [Kon-nichi-wa]

Toilet Toilet [toy-le]

Pronouncing toilet in English is good enough.

Where is ... ? ... wa doko desuka? [... wa dough-ko des-ka?]

Example: Toilet wa doko desuka?

beer [bee-ru]

..., please ..., onegai shimasu [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, 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.

$\bigcirc$			三	四	五.	六	七	八	九	円
0	1	2	3	4	5	6	7	8	9	Yen

Example: 
$$\Lambda = 850 \text{ Yen}$$

五

 $\bigcirc$ 

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。







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。