

The 8th Japan-Korea Joint Summer School
on Accelerator and Beam Science, Nuclear Data, Radiation Engineering, and Reactor Physics

Organizer: The University of Tokyo, Japan Atomic Energy Agency

The 8th Japan-Korea Joint Summer School (Accelerator and Beam Science, Nuclear Data, Radiation Engineering, and Reactor Physics) will be held as follows. Detailed program will be announced on June. We look forward to your active participation of students and young researchers.

1. Date: **August 16(Sun.)-21(Fri.), 2015**
2. Registration
Dead line is **July 17th, 2015**
3. Venue: Ibaraki Quantum Beam Research Center (Tokai village, Ibaraki, Japan)
4. Expected number of participants is about 80 people (including students and young participants 40 people)
5. Payment
Registration fee
 - Japanese student: 4,000 JPY
 - Korean student: Free
 - General: 6000 JPY
 - Lecturer: FreeWelcome Reception fee
 - Japanese student: 3,000 JPY
 - Korean student: Free
 - General: 5000 JPY
 - Lecturer: FreeAccommodation fee: 2,000 JPY per night (Dormitory of Univ. of Tokyo)
1,800 JPY per night (Dormitory of ISSP)
2,500 JPY per night (Dormitory of J-PARC)
6. Contents

(1) Schedule

Schedule	Contents
Aug. 16 (Sun.)	Evening: Welcome Reception
Aug. 17 (Mon.)	AM: Reception, Opening, Special lecture PM: Lecture Evening: Student's poster session
Aug. 18 (Tue.)	AM: Lecture PM: Lecture
Aug. 19 (Wed.)	AM: Lecture PM: Facility tour
Aug. 20 (Thu.)	AM: Practice (select from Linac, HIT, and X-ray source) PM: Practice (Report)
Aug. 21 (Fri.)	AM: Lecture PM: Farewell Party, Closing

(2) Contents of the lecture

- Special lecture: ADS (including nuclear transmutation)
- Lecture: From 4 fields (Accelerator and Beam Science, Nuclear Data, Radiation Engineering, and Reactor Physics), we would like to conduct lectures which consist of 3 themes per each field. The contents contain a wide range from basic to applications (e.g. one tutorial, two advanced contents or topics), and are in consideration of the educational effect on young students. Taking into account the lectures to be held in Tokai Japan, we would like to pick up the themes such as J-PARC, issues related to Fukushima, nuclear security, and so on.

(3) Lecturer

Total number of lecturer is 12 persons. However, the lecturers are three persons (two lecturers from Japan, one lecturer from Korea) per each field.

(4) Practices

The following practices are scheduled using apparatuses held by the University of Tokyo at Tokai campus.

- Linac: Accelerator and Beam Science, Radiation engineering
- HIT: Accelerator and Beam Science, Reactor physics
- Portable linac X-ray source: Accelerator and Beam Science, Radiation engineering

Staffs manage everything of practices. The registration procedure for occupationally exposed person is unnecessary because the participation students perform the practices as temporary entrance person to the controlled area.

For these practices theme, the capacity is about 10 persons per theme. We request theme selection and self-study (including the submission of the pre-report) to students beforehand.

7. Other

- Official identification (driver's license, passport) is required in the event of tour.
- Student poster session is reviewed by the participants, and awarded the Best Poster Award.
- The participants can accommodate Dormitory of Univ. of Tokyo, ISSP, J-PARC, and nearby hotels.

8. Inquiries

Japanese side
Satoshi Jinno
Nuclear Professional School, The University of Tokyo
E-mail: jinno@nuclear.jp

日本原子力学会
第8回日韓合同サマースクール
(加速器・ビーム科学、核データ、放射線工学、炉物理)

開催のご案内

主催：東京大学、日本原子力研究開発機構

下記のとおり、第8回日韓合同サマースクール（加速器・ビーム科学、核データ、放射線工学、炉物理）を開催いたします。詳細なプログラム等、正式な開催案内は6月を予定しておりますので、学生・若手研究者の皆様の積極的なご参加をお願いいたします。

1. 開催日程 平成27年8月16日（日）～21日（金）
2. 参加申込み締切 平成27年7月17日（金）
3. 開催場所 いばらき量子ビーム研究センター（茨城県那珂郡東海村）
4. 参加予定人数 約80名（うち学生若手参加者予定人数40名）
5. 費用
 参加費：日本人学生 4,000 円
 韓国人学生 無料
 一般 6,000 円
 講師 無料
 懇談会：日本人学生 3,000 円
 韓国人学生 無料
 一般 5,000 円
 講師 無料
 宿泊費：1泊 2,000 円（東大研究員宿舎）最大41名
 1泊 1,800 円（物性研宿舎）最大の空き部屋数 シングル18、ツイン2
 1泊 2,500 円（J-PARC 東海ドミトリ）ユーザー登録不要
6. 内容
 (1) 全体構成

日 程	内 容
8/16（日）	夕方：Welcome Reception
8/17（月）	午前：受付、開校式、特別講義 午後：講義 夕方：日韓学生によるポスターセッション
8/18（火）	午前：講義 午後：講義
8/19（水）	午前：講義 午後：施設見学

8/20 (木)	午前：実験実習（ライナック、HIT、X線源を選択で実施） 午後：実験実習（レポート作成）
8/21 (金)	午前：講義 午後：Farewell Party、閉校式

(2) 講義について

特別講義：ADS（核変換含む）

講義：4部会より、各部会あたり3テーマ程度をセレクトして講義を行う。内容としては、基礎～応用を幅広く含んだものとし(例えば1件はtutorial、2件はadvanced or topical)、若手学生に対する教育的効果を配慮したものとする。

講義の特徴として、日本・東海での開催を意識して、J-PARC、福島関連、核セキュリティなど挙げられる。

(3) 講師について

各部会から3名（日本から講師2名、韓国から1名）ずつ、計12名を予定。

(4) 実験実習について

東京大学東海キャンパスで保有するライナック、HIT、弥生シミュレータ、可搬型ライナックX線源を用いて、下記実験を実施する。

- ライナック：(分野：加速器・ビーム科学、放射線工学)
- HIT：(分野：加速器・ビーム科学、炉物理)
- 可搬型ライナックX線源：(分野：加速器・ビーム科学、放射線工学)

いずれの実験においても担当職員が行う。参加学生は管理区域一時立入り者（見学者、実験補助者）としてデータ収集、分析に携わっていただくので、放射線業務従事者への登録は不要。

これらの実験テーマについて、1テーマあたり約10名を定員として、学生には事前にテーマ選択及び実験テキストの自習（事前レポートの提出を含む）を要求する。

7. その他

- 見学の際には公的身分証明書（運転免許証、パスポート、顔写真付住基カードのいずれか、
- 学生ポスターセッションについては参加者による審査を行い、優秀ポスターセッション賞を授与する。
- 宿泊先は東大研究員宿舎、物性研宿舎、J-PARC宿舎、近隣のホテルを予定。

8. 問い合わせ先

東京大学原子力専攻 神野智史 e-mail: jinno@nuclear.jp

Program

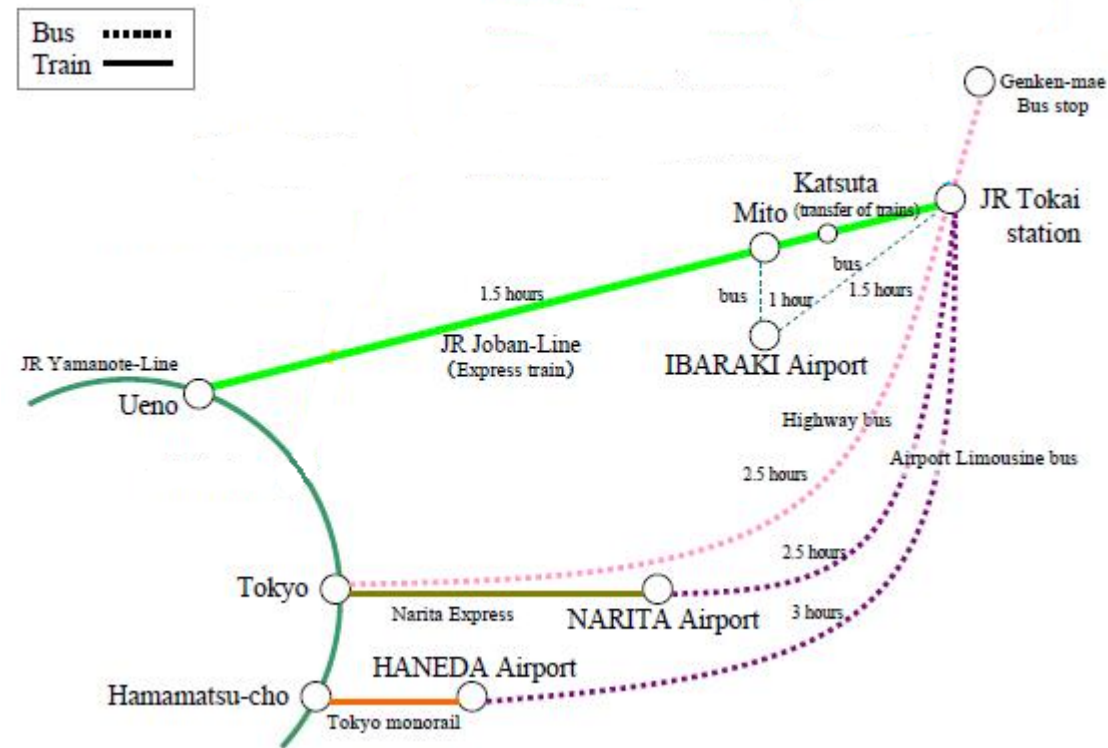
Data	Hour	Topic / Event	Field	Lecturer
August 16 (Sun)	18:00~20:00	Welcome Reception		@ Tokai Kaikan
August 17 (Mon)	9:30~10:40	Registration		@ Ibaraki Quantum Beam Research Center
	10:40~11:00	Opening		
	11:00~12:00	Special Lecture “ADS”	RP	Kenji NISHIHARA (JAEA)
	12:00~13:40	Lunch break		
	13:40~14:30	Lecture 1 “Proton Linac”	AC	Sungkyun PARK (KAERI)
	14:30~16:30	Student’s Poster Session		
August 18 (Tue)	9:30~10:20	Lecture 2 “Introduction of particle and heavy ion transport code system, PHITS”	RE	Tatsuhiko SATO (JAEA/NSEC)
	10:30~11:20	Lecture 3 “An Innovative Digital Reactivity Meter based on Simple Feedback Theory”	RP	Yoichiro SHIMAZU (Fukui Univ.)
	11:30~12:20	Lecture 4 “Introduction to nuclear data measurement”	ND	Atsushi KIMURA (JAEA)
	12:20~14:00	Lunch break		
	14:00~14:50	Lecture 5 “Homogenization Theory and Methods in Nuclear Reactor Analysis”	RP	Yonghee KIM (KAIST)
	15:00~15:50	Lecture 6 "Nuclear Data Evaluation for Neutron Induced Reaction"	ND	Hyeong II Kim (KAERI)
August 19 (Wed)	9:30~10:20	Lecture 7 “Radiation Imaging Detection”	RE	Gyuseong CHO (KAIST)
	10:30~11:20	Lecture 8 Three-dimensional nuclear chart - understanding nuclear physics and nucleosynthesis in stars	ND	Hiroyuki KOURA (JAEA)
	11:30~12:20	Lecture 9 “J-PARC 3 GeV Rapid Cycling Synchrotron”	AC	Kazami YAMAMOTO (JAEA/J-PARC)
	12:20~14:00	Lunch break		

	14:00~16:00	Facility tour		@ J-PARC
	16:00~19:00	Recreation		@Shopping center
	19:00~21:00	Dinner		
August 20 (Thu)	9:30~10:20	Pre-lecture for experiments		
	10:20~12:20	Experiments Linac (Field: AC, RE) HIT (Field: AC, RP) Portable linac X-ray source (Field: AC, RE)		@ The Univ. of Tokyo Tokai campus
	12:20~14:00	Lunch break		
	14:00~16:00	Experiments & Drawing up a report		
August 21 (Fri)	9:30~10:20	Lecture 10 “Nondestructive measurement of nuclear material by laser Compton scattered gamma-ray”	AC	Ryoichi HAJIMA (JAEA/QuBS)
	10:30~11:20	Lecture 11 “Radiation measurement for environmental restoration after accident of Fukushima dai-ichi nuclear power station”	RE	Yukihisa SANADA (JAEA/Fukushima)
	11:30~12:20	Lecture 12 “Extracting debris”	RP	TBD (IRID)
	12:20~14:30	Farewell Party		
	14:30~15:00	Closing		

※AC: Accelerator & Beam Science; ND: Nuclear Data; RE: Radiation Engineering; RP: Reactor Physics

Access

http://is.j-parc.jp/uo/page_eng/access.html



Shinagawa, Tokyo and Ueno (Tokyo) to Tokai

JR Joban Line Limited Express, “Hitachi (Super Express)” and “Tokiwa (Limited Express)”, is available from Shinagawa, Tokyo and Ueno Station. Some Limited Express trains stop at Tokai station. However, in most cases you need to get off at Mito or Katsuta station and change to a local train to reach Tokai, which is the 3rd station from Mito (2nd from Katsuta). Traveling time is 10 to 15 minutes.

Approximate traveling time

From Tokyo Sta. to Tokai Sta.: 90 minutes (at earliest)

- From Tokyo Sta. to Mito Sta. with “Hitachi (Super Express)” : 74 minutes
- From Mito to Tokai with local train: 15 minutes

Fare

From Tokyo (Shinagawa, Tokyo or Ueno) to Tokai : 3,820 yen

One-way ticket to Tokai : 2,270 yen

Express Surcharge (Tokyo to Mito): 1,550 yen

Airport limousine, Narita Airport departure

Bus stop name									
Narita Airport Terminal 3	7:25	9:05	10:15	14:20	15:50	17:00	18:20	19:30	20:40
Narita Airport Terminal 2	7:30	9:10	10:20	14:25	15:55	17:05	18:25	19:35	20:45
Narita Airport Terminal 1	7:35	9:15	10:25	14:30	16:00	17:10	18:30	19:40	20:50
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Suigo Itako bus terminal P	8:00	9:40	10:50	14:55	16:25	17:37	18:55	20:05	21:15
Hokota bill P	8:29	10:09	11:19	15:24	16:54	18:08	19:24	20:33	21:43
Shinhokota Station P	8:41	10:21	11:31	15:36	17:06	18:20	19:36	20:45	21:55
Sawajiri	8:58	10:38	11:48	15:53	17:23	18:38	19:53	20:59	22:09
Mito Oarai Inter P	9:12	10:52	12:02	16:07	17:37	18:55	20:07	21:13	22:23
Mito Station south exit	9:29	11:09	12:19	16:24	17:54	19:14	20:24	21:27	22:37
Katsuta Station West	9:48	11:28	12:38	16:43	18:13	19:33	20:43	21:43	22:53
Ibaraki traffic Katsuta office P	9:56	11:36	12:46	16:51	18:21	19:41	20:51	21:51	23:01
Tokai Station East Exit	10:08	11:48	12:58	17:03	18:33	19:53	21:13	22:10	23:10
Shintanaka in P	10:23	12:03	13:13	17:18	18:48	20:08	21:28	22:22	23:22
Hitachi Station Central Exit	10:46	12:26	13:36	17:41	19:11	20:31	21:51	22:41	23:41

Airport limousine, Haneda Airport departure

Bus stop name					
Haneda International Terminal 1 bus stop	13:15	14:45	16:35	18:35	20:10
Haneda Airport Terminal 2 4 bus stop	13:25	14:55	16:45	18:45	20:20
Haneda Airport Terminal 1 4 bus stop	13:30	15:00	16:50	18:50	20:25
↓	↓	↓	↓	↓	↓
Ishioka (Joban road) P	14:55	16:25	18:25	20:25	21:45
Mito Oarai Inter P	15:20	16:50	18:50	20:50	22:10
Mito Station south exit	15:35	17:10	19:05	21:00	22:20
Katsuta Station West	15:55	17:35	19:25	21:15	22:35
Ibaraki traffic Katsuta office P	16:05	17:45	19:35	21:20	22:40
Tokai Station East Exit	16:15	17:55	19:45	21:30	22:50
Shintanaka in P	16:30	18:10	19:55	21:40	23:00
Hitachi Station Central Exit	17:00	18:35	20:15	22:00	23:20

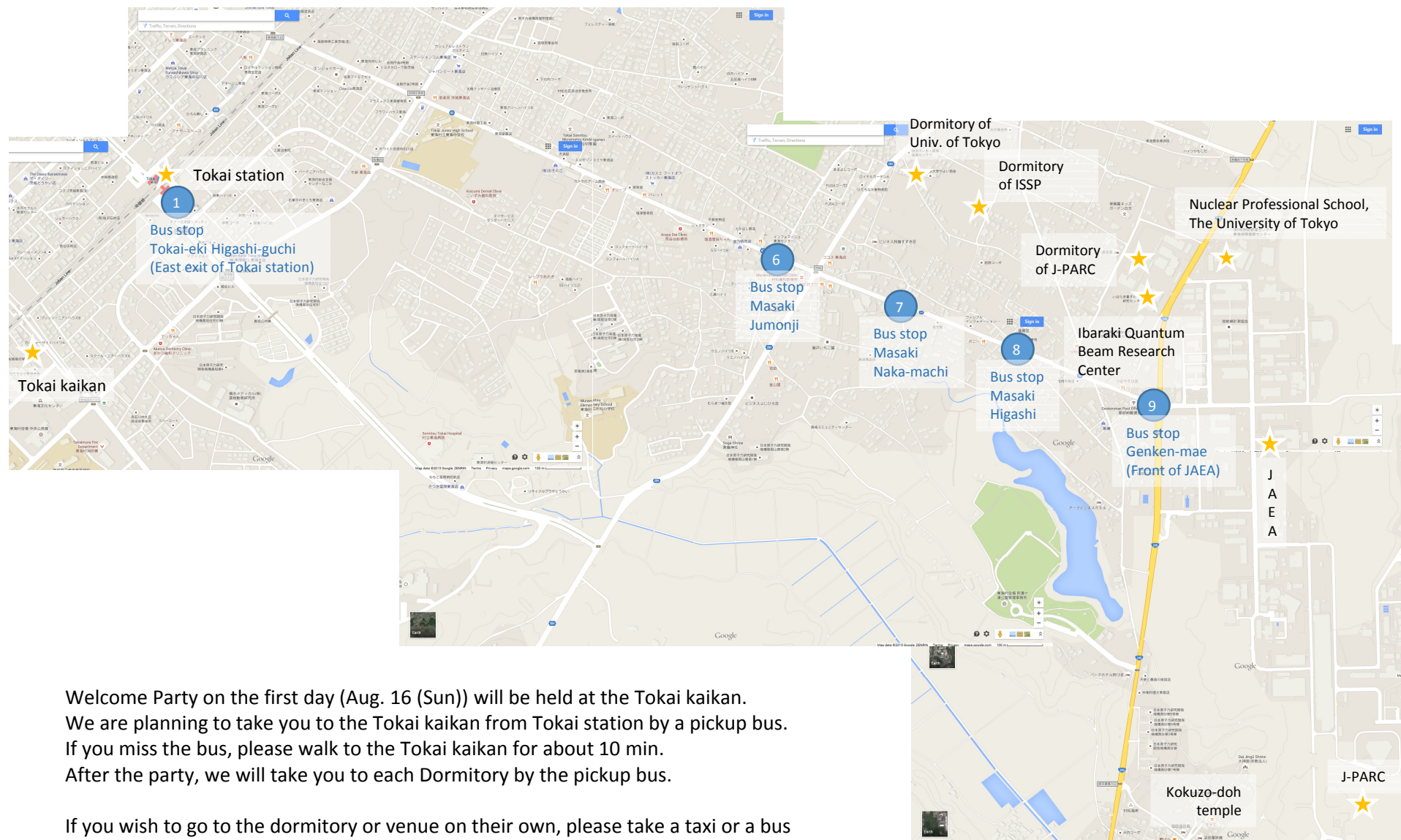
Highway express bus, Tokyo Station departure

Bus stop name	Every day	Every day	Every day	Every day	Every day	Every day	Every day	Saturdays, Sundays, and holidays
Tokyo Station Yaesu South Exit	10:30	15:30	16:40	17:30	18:30	19:40	20:50	21:30
↓	↓	↓	↓	↓	↓	↓	↓	↓
Mito Oarai Inter P	12:06	17:06	18:16	19:06	20:06	21:16	22:26	23:06
Seaside Park west entrance *	12:22	↓	↓	↓	↓	↓	↓	↓
Safe driving center training institute	12:24	↓	↓	↓	↓	↓	↓	↓
Seaside Park entrance P	12:30	17:21	18:31	19:21	20:21	21:31	22:41	23:21
Hongodai park entrance	12:33	17:24	18:34	19:24	20:24	21:34	22:44	23:24
Sasano apartment before	12:35	17:26	18:36	19:26	20:26	21:36	22:46	23:26
Hitachinaka City Hall	12:37	17:28	18:38	19:28	20:28	21:38	22:48	23:28
Katsuta Station East Exit	12:41	17:32	18:42	19:32	20:32	21:42	22:52	23:32
Higashiishikawa apartment entrance	12:45	17:36	18:46	19:36	20:36	21:46	22:56	23:36
Ibaraki traffic Katsuta office P	12:47	17:38	18:48	19:38	20:38	21:48	22:58	23:38
It midorigaoka park north exit	12:55	17:46	18:56	19:46	20:46	21:56	23:06	—
Tokai Station East Exit	13:01	17:52	19:02	19:52	20:52	22:02	23:12	—
Tokai Genken-mae (Front of JAEA)	13:07	17:58	19:08	19:58	20:58	22:08	23:18	—
Japan Atomic Energy Agency before	13:11	18:02	19:12	20:02	21:02	22:12	23:22	—

Close to the welcome reception venue

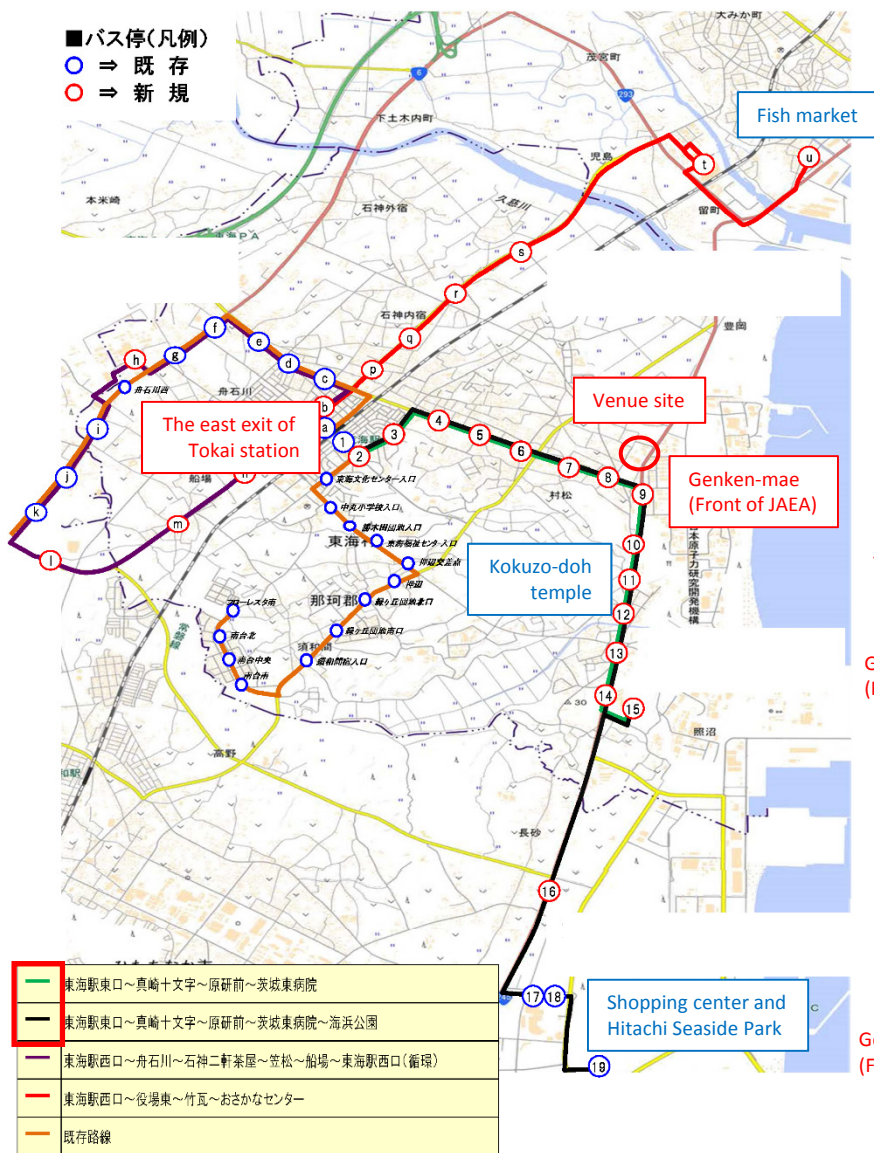
Close to the lecture hall

Map of Tokai Village



Welcome Party on the first day (Aug. 16 (Sun)) will be held at the Tokai kaikan.
We are planning to take you to the Tokai kaikan from Tokai station by a pickup bus.
If you miss the bus, please walk to the Tokai kaikan for about 10 min.
After the party, we will take you to each Dormitory by the pickup bus.

If you wish to go to the dormitory or venue on their own, please take a taxi or a bus following timetable.



※国土地理院ホームページ「地理院地図(電子国土地図)」(<http://maps.gsi.go.jp/#14/36.472498/140.563459>)を基に作成しています。

【新たな路線の時刻表】

■東海駅西口～笠松循環線 時刻表 斜体青文字土日祝運休

a	東海駅西口(発)	▲6:51	7:05	8:00	9:02	15:05	16:29	17:18	18:18	19:02	19:53
b	舟石川中央	6:50	7:07	8:02	9:04	15:07	16:31	17:20	18:20	19:04	19:55
c	内宿入口	6:49	7:09	8:04	9:06	15:09	16:33	17:22	18:22	19:06	19:57
d	大山台	6:48	7:10	8:05	9:07	15:10	16:34	17:23	18:23	19:07	19:58
e	東海団地入口	6:47	7:11	8:06	9:08	15:11	16:35	17:24	18:24	19:08	19:59
f	石神二軒茶屋	6:46	7:13	8:08	9:10	15:13	16:37	17:26	18:26	19:10	20:01
g	舟石川入口	6:45	7:14	8:09	9:11	15:14	16:38	17:27	18:27	19:11	20:02
h	三菱原子燃料	6:43	7:16	8:11	9:13	15:16	16:40	17:29	18:29	19:13	20:04
i	笠松	6:41	7:20	8:15	9:17	15:20	16:44	17:33	18:33	19:17	20:08
j	笠松運動公園	6:40	7:21	8:16	9:18	15:21	16:45	17:34	18:34	19:18	20:09
k	孫目	-	7:22	8:17	9:19	15:22	16:46	17:35	18:35	19:19	20:10
l	プール前	-	7:24	8:19	9:21	15:24	16:48	17:37	18:37	19:21	20:12
m	船場	-	7:26	8:21	9:23	15:26	16:50	17:39	18:39	19:23	20:14
n	舟石川小前	-	7:27	8:22	9:24	15:27	16:51	17:40	18:40	19:24	20:15
o	西口郵便局	-	7:28	8:23	9:25	15:28	16:52	17:41	18:41	19:25	20:16
a	東海駅西口(着)	-	7:30	8:25	9:27	15:30	16:54	17:43	18:43	19:27	20:18

※笠松運動公園6:40発のみ、笠松運動公園→三菱原子燃料→石神二軒茶屋、経由の東海駅西口行きとなります

■東海駅西口～おさかなセンター線 時刻表(昼間運行)

a	東海駅西口(発)	10:05	11:05	13:05	14:05	u	おさかなセンター(発)	10:30	11:30	13:30	14:30
b	舟石川中央	10:07	11:07	13:07	14:07	t	カインズホーム前	10:35	11:35	13:35	14:35
p	役場東	10:09	11:09	13:09	14:09	s	竹瓦	10:40	11:40	13:40	14:40
q	JAIにじのなか	10:12	11:12	13:12	14:12	r	長松院	10:41	11:41	13:41	14:41
r	長松院	10:13	11:13	13:13	14:13	q	JAIにじのなか	10:42	11:42	13:42	14:42
s	竹瓦	10:14	11:14	13:14	14:14	p	役場東	10:45	11:45	13:45	14:45
t	カインズホーム前	10:19	11:19	13:19	14:19	b	舟石川中央	10:47	11:47	13:47	14:47
u	おさかなセンター	10:24	11:24	13:24	14:24	a	東海駅西口	10:49	11:49	13:49	14:49

■東海駅東口～茨城東病院(海浜公園西口昼間運行)線 時刻表 斜体青文字土日祝運休

1	東海駅東口(発)	7:05	7:58	9:06	10:00	12:07	13:57	16:31	17:11	17:55	19:00	19:52	20:33
2	イオン大塚店前	7:06	7:59	9:07	10:01	12:08	13:58	16:32	17:12	17:56	19:01	19:53	20:34
3	なごみ入口	7:07	8:00	9:08	10:02	12:09	13:59	16:33	17:13	17:57	19:02	19:54	20:35
4	東海中学校	7:08	8:01	9:09	10:03	12:10	14:00	16:34	17:14	17:58	19:03	19:55	20:36
5	荒谷台住宅前	7:09	8:02	9:10	10:04	12:11	14:01	16:35	17:15	17:59	19:04	19:56	20:37
6	真崎十文字	7:10	8:03	9:11	10:05	12:12	14:02	16:36	17:16	18:00	19:05	19:57	20:38
7	真崎仲町	7:11	8:04	9:12	10:06	12:13	14:03	16:37	17:17	18:01	19:06	19:58	20:39
8	海浜東	7:12	8:05	9:13	10:07	12:14	14:04	16:38	17:18	18:02	19:07	19:59	20:40
9	原研前	7:13	8:06	9:14	10:08	12:15	14:05	16:39	17:19	18:03	19:08	20:00	20:41
10	阿瀬ヶ浦	7:14	8:07	9:15	10:09	12:16	14:06	16:40	17:20	18:04	19:09	20:01	20:42
11	虚空蔵寺入口	7:15	8:08	9:16	10:10	12:17	14:07	16:41	17:21	18:05	19:10	20:02	20:43
12	村松宿	7:16	8:09	9:17	10:11	12:18	14:08	16:42	17:22	18:06	19:11	20:03	20:44
13	原子力機構前	7:17	8:10	9:18	10:12	12:19	14:09	16:43	17:23	18:07	19:12	20:04	20:45
14	茨城東病院前	7:18	8:11	9:19	10:13	12:20	14:10	16:44	17:24	18:08	19:13	20:05	20:46
15	茨城東病院	7:19	8:12	9:20	10:14	12:21	14:11	16:45	17:25	18:09	19:14	20:06	20:47
16	JA長砂	-	-	-	-	10:18	12:25	14:15	-	-	-	-	-
17	ジョイフル本田西	-	-	-	-	10:22	12:29	14:19	-	-	-	-	-
18	ジョイフル本田東	-	-	-	-	10:23	12:30	14:20	-	-	-	-	-
19	海浜公園西口	-	-	-	-	10:26	12:33	14:23	-	-	-	-	-

The suspended service at weekends and holidays.

19	海浜公園西口(発)	-	-	-	-	10:30	12:35	14:30	-	-	-	-	-
18	ジョイフル本田東	-	-	-	-	10:33	12:38	14:33	-	-	-	-	-
17	ジョイフル本田西	-	-	-	-	10:34	12:39	14:34	-	-	-	-	-
16	JA長砂	-	-	-	-	10:38	12:43	14:38	-	-	-	-	-
15	茨城東病院	6:39	7:25	8:30	9:25	10:42	12:47	14:42	16:46	17:30	18:30	19:25	20:09
14	茨城東病院前	6:40	7:26	8:31	9:26	10:43	12:48	14:43	16:47	17:31	18:31	19:26	20:10
13	原子力機構前	6:41	7:27	8:32	9:27	10:44	12:49	14:44	16:48	17:32	18:32	19:27	20:11
12	村松宿	6:42	7:28	8:33	9:28	10:45	12:50	14:45	16:49	17:33	18:33	19:28	20:12
11	虚空蔵寺入口	6:43	7:29	8:34	9:29	10:46	12:51	14:46	16:50	17:34	18:34	19:29	20:13
10	阿瀬ヶ浦	6:44	7:30	8:35	9:30	10:47	12:52	14:47	16:51	17:35	18:35	19:30	20:14
9	原研前	6:45	7:31	8:36	9:31	10:48	12:53	14:48	16:52	17:36	18:36	19:31	20:15
8	真崎東	6:46	7:32	8:37	9:32	10:49	12:54	14:49	16:53	17:37	18:37	19:32	20:16
7	真崎仲町	6:47	7:33	8:38	9:33	10:50	12:55	14:50	16:54	17:38	18:38	19:33	20:17
6	真崎十文字	6:48	7:34	8:39	9:34	10:51	12:56	14:51	16:55	17:39	18:39	19:34	20:18
5	荒谷台住宅前	6:49	7:35	8:40	9:35	10:52	12:57	14:52	16:56	17:40	18:40	19:35	20:19
4	東海中学校	6:50	7:36	8:41	9:36	10:53	12:58	14:53	16:57	17:41	18:41	19:36	20:20
3	なごみ入口	6:51	7:37	8:42	9:37	10:54	12:59	14:54	16:58	17:42	18:42	19:37	20:21
2	イオン大塚店前	6:52	7:38	8:43	9:38	10:55	12:59	14:55	16:59	17:43	18:43	19:38	20:22
1	東海駅東口	6:53	7:39	8:44	9:39	10:56	13:01	14:56	17:00	17:44	18:44	19:39	20:23

Bus fare: 220 JPY, ①The east exit of Tokai station – ⑨Genken-mae (Front of JAEA)