IPST 2009

- KYOTO

Tue. 2 to Sat. 6 June 2009

at

Doshisha University

Kyoto International Community House

and Century Hotel / Miel-Parque

Hosted by DOSHISHA University
Infrastructure Research Center

IPST 2009 / KYOTO

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Welcome Message

Dear colleagues,
On behalf of the Technical Program and Local Organizing Committees, we have the pleasure of welcoming you to the International Conference on Power Systems Transients (IPST 2009) in Kyoto, the heart of Japanese peoples.

The history of the IPST started in 1993: the first European Conference on Power Systems Transients-EPST '93 was held in Lisbon on June 16-18, 1993. The goal of this Conference was to promote the study of Power Systems Transients by offering a common platform of scientific and technical excellence. Technical contributions came from EMTP users and also from the scientific community involved in all topics related to the study of transient phenomena in electric energy systems. The Conference was thought to be continued on a two years basis. The very positive response to EPST '93 encouraged to strengthening the involvement of the International Power Systems Transients scientific community, and the International Conference on Power Systems Transients was born in 1995.

The number of abstracts submitted to the IPST 2009, more than 310 from 58 countries, confirms the interest that this conference has generated. The International Technical Program Committee chaired by Prof. Maria Teresa Correia de Barros and Dr. Mario Paolone had the difficult and challenging selection task. More than 110 contributions will be presented at IPST 2009, covering all topics related to the study of transient phenomena in electric energy systems.
Many individuals and institutions have contributed to making this conference a success. We wish to express our deepest gratitude and appreciation to the Technical Program Committee members and the Steering Committee members as well as to the Advisory Committee and the Supporting staffs. Special thanks are also due to the session chair and, last but not least, to all the authors of the conference.

We do hope that you will take the time to enjoy Kyoto and its wonderful surroundings.
The conference site was originally planned to be Doshisha University Imadegawa Campus located right next north to Kyoto Imperial Palace. However, all of sudden, we have to move to the Kyoto International Community House (KIC), because of very tight health measures against the swine flu in Japanese universities. The Local Organizing Committee is terribly sorry for this sudden change which might cause various inconveniences to all the participants. The KIC is located at a corner of sightseeing area in Kyoto. We invite you to take a rest during session breaks by walking around Nanjenji Temple, 5 minutes walking from the KIC. In Kyoto, you may find a temple or a shrine every two to three blocks. The banquet will be held in a typical temple garden similar to Golden and Silver Pavilions.

Enjoy the IPST 2009 and Kyoto!!

IPST 2009 Local Organizing Committee
Chairperson Aki Ametani

IPST 2009 / Kyoto Program

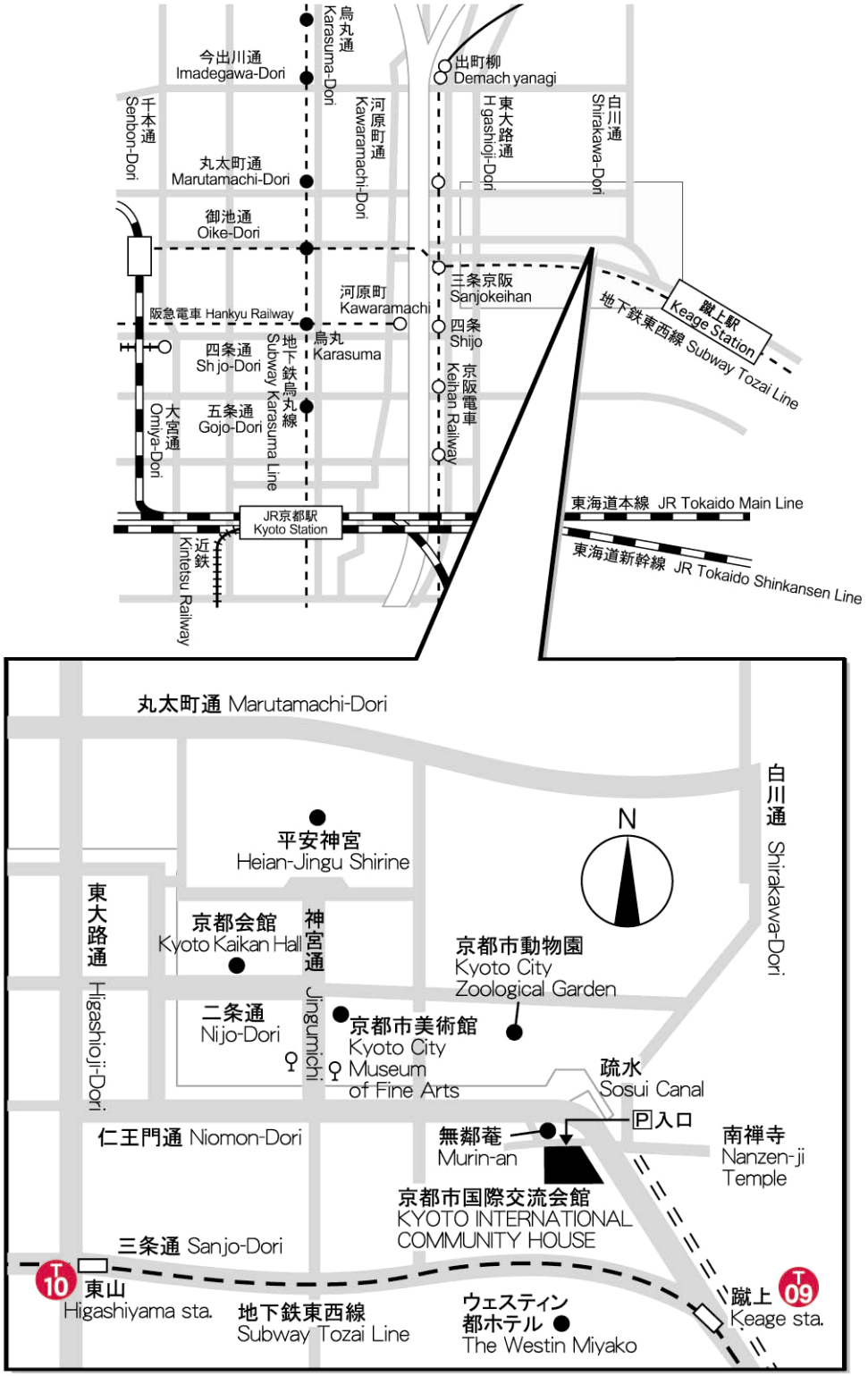
Time Table of Sessions and Social Activities

2 Tue.	Registration from 17:00 to 20:00 in front of Room Zuiho at Century Hotel (See Map-1) Opening session from 18:00 to 19:00 in Room Zuiho of Century Hotel Welcome cocktail 19:00 to 21:00 in the same room		
3 Wed.	09:20 – 11:00	11:30 – 13:10	14:50 – 16:30
	session KS*, 1B, 1C	Session 2A, 2B, 2C	Session 3A, 3B, 3C
	Registration from 9:30 to 16:00 in front of Room A		
4 Thu.	Session 4A, 4B, 4C	Session 5A, 5B, 5C	Session 6A, 6B, 6C
	Registration from 10:00 to 16:00, Banquet dinner from 17:30 to 20:00 at Shosei-En		
5 Fri.	Session 7A, 7B, 7C	Session 8A, 8B	Session 9A, 9B
		Tutorial Course cooperated with CIGRE SC C4 at Room C	
	Registration from 10:00 to 16:00		
6 Sat.	Closing Session at the meeting room A on the 5th floor of Miel-Parque (See Map-2) from 10:00 to 11:00		
	Discover Kyoto Tour from 13:00 to 18:00 / courses A to C (buses A to C)		
Session rooms	Room A = Special Conference Room on 2nd floor (Separate entrance) Room B = Conference Rooms 1 and 2 on the grand floor in the main building Room C = Seminar Room at the third floor (3F) in the main building		

1. Technical sessions from 3 to 5 June at Kyoto International Community House (KIC)
2. Shuttle buses operated from / to Shin (New) Miyako Hotel (See Map-3) and KIC from 3 to 5 June
   (1) From the hotel to KIC
   Bus [1] at 08:15, Bus [2] at 08:30
   (2) from KIC to the hotel
   Bus [1] at 16:40, Bus [2] at 16:50
3. Keynote speech (KS*) form 10:00 to 11:00 at room A on 3 June

Kyoto International Community House

http://www.kcif.or.jp/en/access/



Contents of the Program

General Information

A. Travel

A1. Flight to Japan

The nearest airport to Kyoto is the Osaka Kansai International Airport to which there are direct flights from Helsinki, Amsterdam, Frankfurt and Paris in Europe and Seattle, San Francisco and Los Angeles in the North America.

Also, there are many flights that connect to Tokyo Narita International Airport. However, from that airport it takes more than 3.5 hours to reach Kyoto by train. In particular, a bullet-express train called Shin-Kan-Sen directly connects Tokyo to Kyoto and requires, in general, seat reservation which makes foreigners quite confused due to of language issues. For these reasons, it is recommended to take a flight to the Osaka Kansai International Airport.

It is possible to fly from Europe to Osaka and return from Tokyo to Europe by Japan Airline (JL) and Lufthansa (LH). Ask the detail to JL, LH or a travel agent.

You can get a discount return ticket between Helsinki and Osaka (or Tokyo) by about 200 Euros. Further details are available in the home page of the Fin-Air.

A2. How to reach Kyoto Railway Station and your hotel

[1] Arriving at Kansai International Airport (code KIX, Osaka)

1. Japan Railway (JR) KIX station (noted as (a) in the attached Map-1) is the building next to the airport terminal connected by pedestrian bridges on the second-floor level. (note that in Japan, the ground floor corresponds to the first floor). The arrivals are at the ground floor, it is suggested to and go up to the second floor by an escalator or on an elevator. The top view of the JR (-KIX) station is shown in Map-1.

2. There is a JR ticketing office (noted as (b) in Map-1), green colored sign called MIDORI-NO-MADOGUCHI = green color counter of JR office, indicates the position of the JR ticketing office; ticketing machines (noted as (c) in Map-1) left to the office in front of the JR station gate (a) are also available. Remind that there is another station (noted as (d) in Map-1), right next to the JR station (gates), which is a local railway called “Nankai Railway” for the Osaka area. Distance between Osaka and Kyoto is about 50km, and distance between the airport and Osaka is about 60km. The JR operates a direct special-express train to Kyoto.

3. It is suggested to buy a single ticket of the special express train called “HARUKA” from the airport to Kyoto. The HARUKA is operated every 30 minutes: leave the airport / arrive at Kyoto – 06:34 / 08:02, 07:27 / 09:03, 07:55 / 09:32, 08:46 / 10:03,

09:16 / 10:31, 09:46 / 11:01, ---, 22:16 / 23:32 last one. It takes about 1 hour and 15 min. from the airport to Kyoto and costs : ¥1,830 for the normal fare + ¥1,150 for the special express (no seat reservation) with a total of ¥2,980. In case a seat reservation is requested add ¥1,460 (in any case there is no need to make a seat reservation).

The final stop of most HARUKAs is Kyoto (Platform No.30). Only a few HARUKAs go further from Kyoto. Those trains are the ones with the following departure times from Kansai Airport:

HARUKA No.50 at 19:16
No.54 at 20:16

Also few HARUKAs from Kyoto to Kansai Airport start from a station different from Kyoto and those stop at Platform No.6 or 7 of Kyoto Railway station. Those trains are the ones with the following departure times from Kyoto

HARUKA No.3 at 06:22 Platform No.6
No.9 at 07:50 Platform No.7
No.13 at 08:50 Platform No.7

Otherwise, HARUKAs start from Platform No.30 of Kyoto station.

4. HARUKA is waiting downstairs the JR gate floor. Please keep your ticket because you need it to get out from Kyoto Railway Station gate. If you need the ticket receipt, it is suggested to request it before the ticket purchase. The receipt can be also obtained in case of ticket purchase by using the vending machines.

5. When you arrive at Kyoto Railway Station, possible exits are:
(1) Main (North) gate on the ground (1st) floor (see Map-2.), or
(2) West gate on the second floor (see attached Map-3.)

HARUKA arrives at a ground floor platform, either platform No. 30 (or No. 1 occasionally).

(1) The Main gate is just 1 to 3 minutes walk from your train, just in front of the Main gate you can see the Kyoto Tower that imitates a candle with 120m height as a symbol of Kyoto.

(2) Find a go-up escalator to the second floor. On the second floor, you can find the West gate by 30 seconds walk to the south from the escalator. After the gate, you find a large pedestrian walk-way from north to south. In correspondence of your right (north) at the gate, there is an office of the “Nippon Travel Agency” that is the IPST agent that takes case of the registration and hotel reservation. On your left (south), there is the JR ticketing office “Midori-no-Madoguchi”. Along the walk, there are ISETAN (one of

the finest department store in Japan and is of value for walking round the store) to the north of the gate by 1 min. walk, and also restaurants and cafes.

After the gate, turn left (to the south) and go straight via an escalator and steps until the end. Then go down to the ground floor by an escalator which is on your left side, or by steps.

Additional information: just before the dead end, there is JR Kyoto Station for the well-known Japanese bullet-express train called SHIN-KAN-SEN that connects Kyoto to Tokyo (east-bound, 550km) and to Fukuoka (west-bound, 600km). Kyoto to Tokyo takes 2 hours 15 minutes.

[2] Arriving at Narita (Tokyo) International Airport

1. Take the "Narita Express" from the airport to JR Tokyo station. It takes about 61 minutes, and costs : ¥2,740.
2. Take the SHIN-KAN-SEN from Tokyo to Kyoto.
3. Read A5-(2).

[3] Hotels nearby Kyoto Station: 5 minutes walk from each gate

・ Reservation of a hotel is managed by the IPST travel agent "Nippon Travel Agency". Please make reference to the following home page: http://apollon.nta.co.jp/ipst/

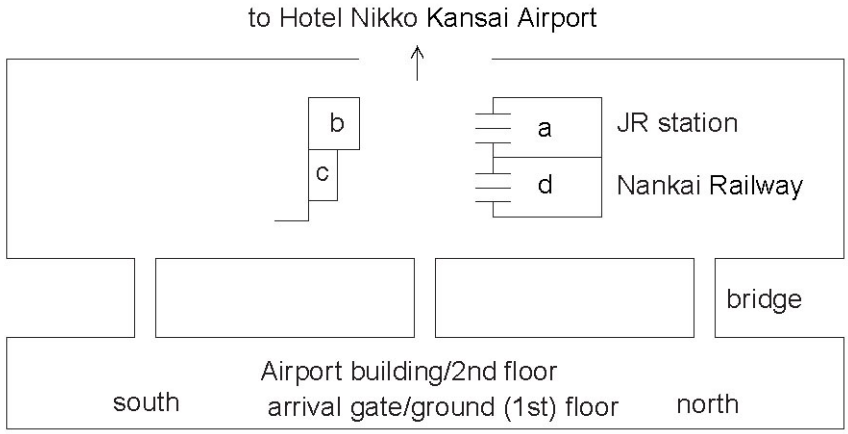
If you like to find a cheap hotel rate, you can directly access a hotel homepage which you have to find by yourself.

1. From the Main gate (See Map-2.)
   (a) Hotel Shin (New)–Hankyu (Kyoto) : €70-100 (b) Kyoto Century Hotel : €70-100
   (c) Hotel Hokke Club Kyoto : €50-80 (d) Kyoto Tower Hotel : €65-70
2. From the West gate (see Map-3)
   (e) New (Shin) Miyako Hotel : €90-100 (f) Hotel Keihan Kyoto : €70-90
   (g) El Inn Kyoto : €50
3. Within the railway building (see Map-2.)
   (h) Hotel Granvia Kyoto : €175
4. Some hotels, such as New Miyako Hotel, provide a free internet access in the room via LAN.

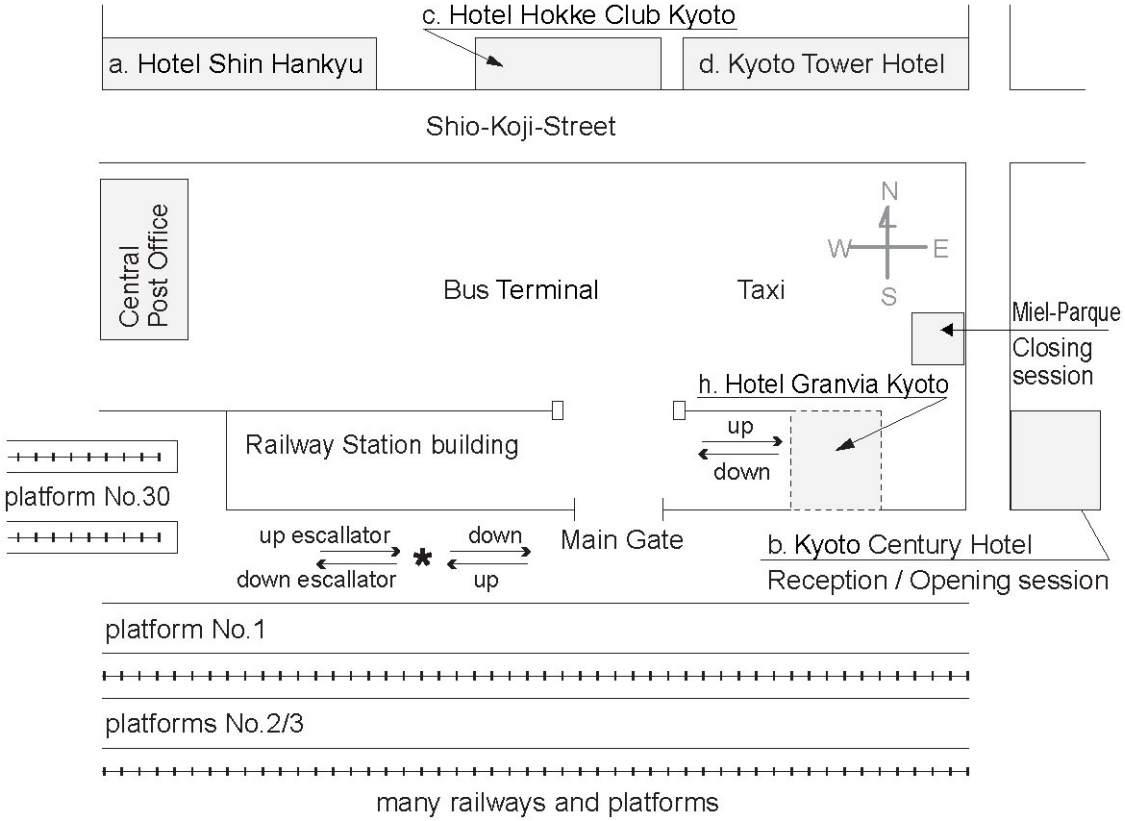
Map-1 Kansai International Airport

Arrival gate north or south on the ground (first) floor

Go up to the second floor by an escalator or an elevator

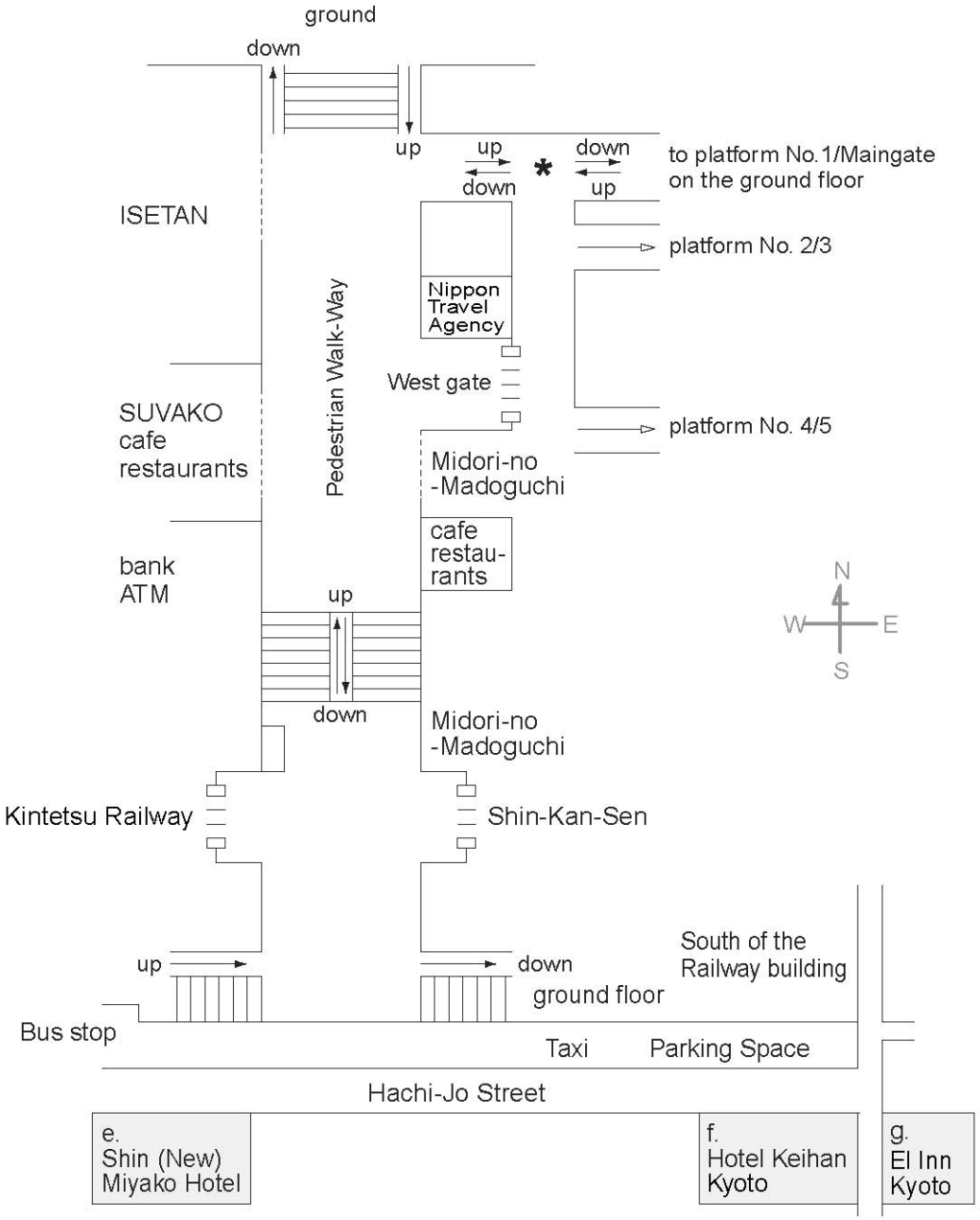


Map-2 Kyoto Railway Station / Ground Floor and the north side



*connected to the second floor

Map-3 **Kyoto Railway Station / 2nd Floor and the south (ground floor)**



A3. Access to Kyoto International Community House (KIC) (See the relevant map on page (iv))

(1) It is suggested to use the underground (Metro) by using the following lines: the first one, Karasuma Line, runs from south to north (north to south) of the city, and the second one, Tozai Line, from west to east. It takes altogether about 15 minutes from Kyoto Railway Station (station code K-11) to the KIC including a transfer from Karasuma Line to Tozai Line. You have first to take the north-bound train from Kyoto Railway Station (station code K-11) to Karasuma-Oike (station code K-08=T-13).

These two stations are separated by 3 stops. Once you arrive in the Karasuma-Oike Station change to the Tozai Line and get off at Keage Station (station code K-09) which is 4 stops from Karasuma-Oike Station. We remind that only one Metro line 8 Karasuma Line) is available at Kyoto Railway Station.

(2) From metro station "Keage" to KIC (See Map-4 and photo-1).
It is suggested to get out from the Keage Station using exit 1. When you reach the ground level (photo-1), go to the right along a pedestrian line. From the exit, it takes only 5 min. (about 100m) to the KIC (photo-2).

Map-4 Area map nearby KIC

Photo-2a : KIC entrance

Photo-2b : KIC Signboard

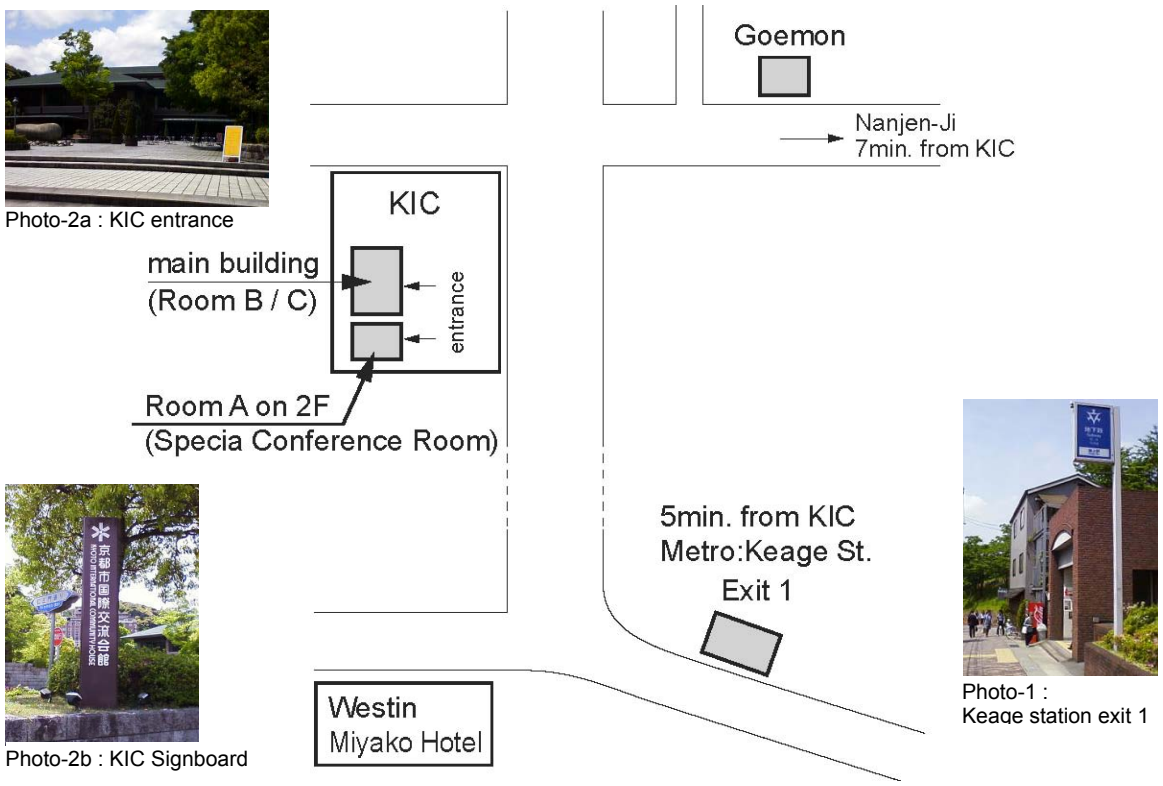


Photo-1 :
Keage station exit 1

(3) How to get a metro ticket and take a train

(a) Ticket

There are ticketing machines (photo-3a) nearby gates (photo-4) in metro stations. From Kyoto Railway Station to Keage, it costs 250JY. One can buy a ticket from the machine (photo-3a). Metro cards are also available (1000JY, 2000JY and 3000JY : photo-3b) and can be used as a ticket. Also, a ticket is bought by


Photo-3a : ticketing machine


Photo-3b : metro-card


Photo-4 : Gate machine

the card from the ticketing machine.

(b) To take a train

Go through a gate machine (photo-4) by inserting a ticket (or a metro card) to enter the metro station (B1F: Basement 1st floor). The ticket is returned to you from the other side of the gate machine. Please keep the ticket (or card) which is necessary to get out from the arrival station. Go one floor down by steps or escalator. The platform is on B2F (Basement 2nd floor).

(c) To go out from the station you arrived

Go one floor up by steps or escalator. You find gate machines. Go through the gate machine by inserting your ticket (or card). Now, the ticket is not returned, but a metro card is returned. If you use the metro card, you will find print-out of the total amount of money used for a metro and the amount of money discharged by this ride of the metro.

B. IPST Registration and Hotel Reservation

IPST registration and hotel reservation are made through the IPST travel agent Nippon Travel Agency : http://apollon.nta.co.jp/ipst/

The registration is taken care by Nippon Travel Agency before 10 May 2009 to avoid any troubles and chaos of confirming the receipt of the registration fee. After 10 May 2009, only on-site registration will be accepted.

(1) Registration fee

a) Early bird (on and before 15 April) ¥70,000-, regular ¥90,000-

- The above registration can be made before 10 May through Nippon Travel Agency.
- After 10 May, on-site registration only.
- The registration fee includes : participation to the IPST 2009 from 3 to 6 June, Welcome Reception on 2 June and Banquet Dinner on 4 June. Also included are the IPST 2009 program, the Abstract record, the USB (on the stick) of the IPST 2009 papers, lunches from 3 to 6 June and Discover Kyoto half-day tour on 6 June.

b) Student and accompanying person : ¥30,000- on and before 10 May, ¥40,000- on site.

- Student registration : no banquet and no Discover Kyoto tour included.
- Accompanying person : no Abstract record, no CD and no lunch included.

c) Banquet and Discover Kyoto tour tickets can be purchased on site if a seat is available.

(2) Registration desk

Tue. 2 June 17:00-20:00 at Kyoto Century Hotel (See Map-2)

Wed. 3 June 9:10-16:00 at Room A of the Kyoto International Community House
Thu. 4 / Fri. 5 10:00-16:00 at Room A of the Kyoto International Community House

C. Climate

In Japan, June is a rainy season, normally from the second week. May is the best season. We hope the first week of June, 2009 is fine. The average temperature in June is 23.2 °C, and the humidity is 60 %. It is better to bring a folding umbrella, but you can buy a cheap umbrella in Japan by 3 Euros or 5 US dollars on a fine day. If rain starts, the price may be doubled.

D. Currency

1 Euro = 120-130 Yen (March 2009)
1 US dollar = 90-100 Yen (March2009)

Money exchange is made only at a bank in a city and an airport and at a hotel. There is no exchange shop such as one in many European cities.

Credit cards (Amex, Visa and Masters) can be used in most hotels, many restaurants and shops.

It is recommended to bring cash ¥10,000 to 20,000 with you to buy a train ticket from the Kansai International Airport to Kyoto.

E. IPST 2009 Program

See the summary in page (iii) of this program.

E1. Technical Session

(1) 3 Wed.	10:00-11:00	Keynote Speech at Room A
	09:20-11:00	Sessions: 1B (room B), 1C (room C)
	11:30-13:10	Sessions: 2A (room A), 2B (room B), 2C (room C)
	14:50-16:30	Sessions: 3A (room A), 3B (room B), 3C (room C)
(2) 4 Thu.	09:20-11:00	Sessions: 4A (room A), 4B (room B), 4C (room C)
	11:30-13:10	Sessions: 5A (room A), 5B (room B), 5C (room C)
	14:50-16:30	Sessions: 6A (room A), 6B (room B), 6C (room C)
(3) 5 Fri.	09:20-11:00	Sessions: 7A (room A), 7B (room B), 7C (room C)
	11:30-13:10	Sessions: 8A (room A), 8B (room B), Tutorial TC-1 (room C)
	14:50-16:30	Sessions: 9A (room A), 9B (room B), Tutorial TC-2 (room C)

For the session rooms, please see the floor map on page 15.

(5) Tutorial Course on Fri. 5 June at Room C

11:30 to 13:10 and 14:50 to 16:30 “Electromagnetic Field Coupling with Transmission Lines” in cooperation with CIGRE SC C4.

E2. Social activities

(1) 2 Tue. 19:00-21:00 Welcome Cocktail at Kyoto Century Hotel (See Map-2, place b)

(2) 4 Thu. 17:30-20:00 Banquet Dinner at Shosei-en

Buses depart at around 16:30 from the KIC.

Banquet : Shosei-en

17:00 to 18:00: walking around the garden

18:00 to 20:00: dinner served

The banquet of the IPST 2009 will be held in the old temple house called Shosei-en with a beautiful Japanese garden called Kikoku-tei which belongs to the largest current of Buddhism in Japan, Higashi Hongan-ji (HHJ), 25 million Japanese belong to this current. The Shosei-en in the Kikoku-tei Garden is one of the temples of the HHJ, and occasionally serves a dinner (rather vegetarian food) to priests of the HHJ and visitors such as the past Emperor and Ministers.

In this banquet, please remind the followings :

(a) All the guests have to take their shoes off at the entrance of the house (Shosei-en).

(b) Sit down on a Japanese Tatami floor for 2 hours during the dinners.

(c) Meals served on a Japanese low-level table are completely old Japanese styles for the Buddhism priests.

(d) Plates and bowls are specifically produced for the temples, very valuable and expensive.

(e) Casual clothing is preferred.

(3) 6 Sat. 13:00-18:00 Discover Kyoto Tour

Buses depart at around 13:00 from New (Shin) Miyako Hotel

E3. Lunch during Sessions

You can choose one of the following 2 restaurants for your lunch.

Please give the ticket when you enter a restaurant. The lunch menu is fixed as indicated below.

A. Lever son Verre (French restaurant), 2F of the KIC : salad or soup, main, desert, tea or coffee.

B. Goemon (Japanese restaurant), follow Map-4 and photo-6a, 6b and 6c : tempura, soup, rice, pickle, Japanese tea.

The above restaurants are reserved specially for the IPST from 12:30 to 14:30 from 3 to 5 June.

Map-4 Area map nearby KIC

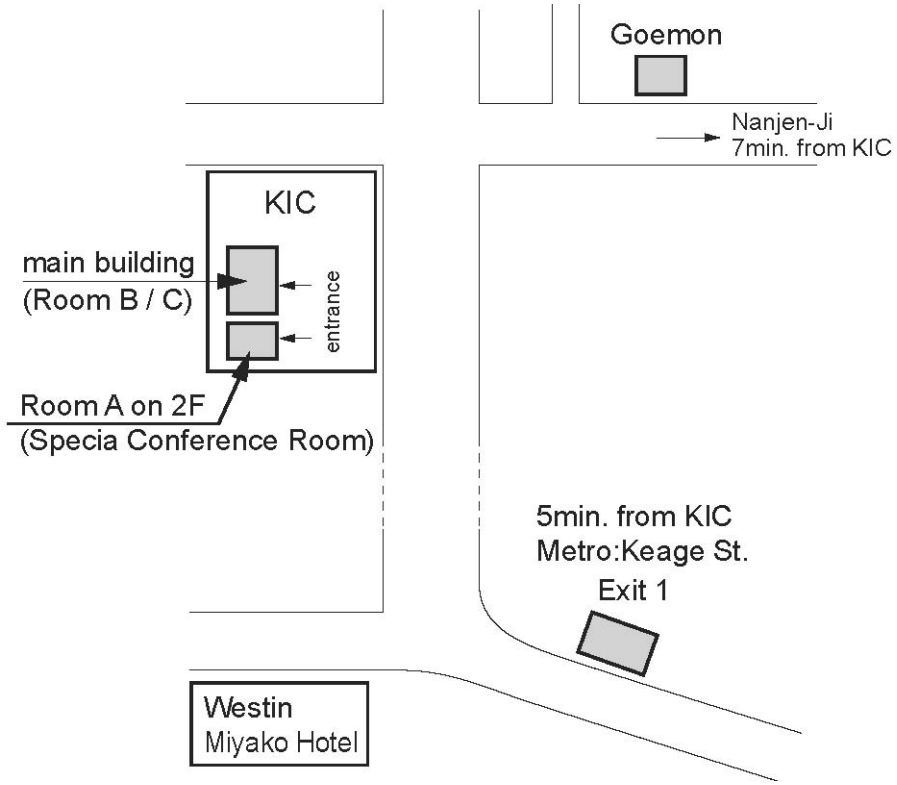



Photo-6a


Photo-6b


Photo-6c

E4. Other Information

1. Official Language

The official language of IPST 2009 is English. All official documents associated with the IPST 2009 should be English.

2. Name Tag

All registered participants are requested to wear name tags in order to join Technical Sessions and Social Programs. Please wear your name tags at all times during the conference period.

3. Instructions for Paper Presentation

General

Conference is organized as 24 technical sessions (with an average of 5 papers per session) and special sessions. Each session has a duration of 100 minutes. Coffee will be available for delegates during the coffee breaks. Three sessions will run simultaneously. Each session is headed by chairpersons. Each presenter has 15 minutes for the presentation of the paper plus 5 minutes for questions and

discussion which will be controlled by the Chairperson.

Guidelines for paper presentation

The following facilities are available for each technical session: Windows- based Computer and LCD-projector.

Power point files of the paper presentations should be sent to the conference secretary, Dr. T. Noda, by means of the following e-mail address: "yo_ipst@criepi.denken.or.jp" before the night of Thursday 28 May in your local time.

Authors' breakfast

Due to the available space and the tight opening time of the Kyoto International Community House, authors' breakfasts are not served. To communicate with the session chairperson, it is recommended to go to the session room 15 min. before the session start. If necessary, please provide your brief CV to the session chairpersons.

4. Message Board

Any program changes or urgent announcement from the Secretariat and person-to-person messages will be posted on the Message Board located near the Registration Desk in front of Room A. Please check the board occasionally.

5. Secretariat Office

Due to the available space at the KIC, the secretariat office is not available. We kindly suggest to make reference to the staff and to the registration desk in front of Room A or in the KIC Lobby.

6. Internet and e-mail access :

An internet access (wireless LAN) is available from 9:00 to 17:00 on 3 to 5 June in the Lobby of the KIC. The IP address and the manual to access through the wireless LAN can be obtained from the office of the KIC.

F. Useful Information

F1. Restaurants and Cafes

If you like to go out for a meal and a drink or after banquet, the following restaurants, cafes and pubs might be good to visit. Remind that you pay for the meal and the drink when you leave from the restaurant in Japan except a self-service one.

[1] Nearby Kyoto Railway (JR) Station

(1) Underground Shopping Center "PORTA"

There are a number and variety of restaurants and cafes. The price is clearly indicated in menus even though not shown in windows, and reasonable in general.

For example, the cheapest “Tempra Course” in “TENKI”, Tempura Specialty, is around 1500 Japanese Yen including 5 different Tempuras with boiled rice, salad and miso-soup. You can choose variety of Japanese foods as much as you want in a buffet – style Japanese restaurant “HARVEST” with the price of 2090 JY. Cafe “LIPTON” is very popular to females because of their nice sweet-cakes and teas, but expensive as a cafe.

(2) ISETAN Department Store 10th / 11th floors
A number of restaurants, are mostly fancy and expensive (3,000 to 10,000 JY). There is a wide self-service corner at the south side on the 10th floor, very cheap.

(3) Renaissance Building Basement, east side of JR main gate
Super Dry Renaissance : German-like beer hall, large jug (1.2 liter) 1300JY, small (0.5 liter) 600JY, each dish from 500 to 1000JY

[2] Down-Town, 10 min. by taxi from JR Station
Japanese-style pub, good to enjoy a night in Kyoto and continue discussions left over during noon-time sessions. Remind no English menu in general, better to accompany a Japanese friend. There are too many restaurants, pubs and cafes in this area. A typical pub is :

(1) SHIZUKA, Tel. 075-221-5148 (within Kyoto), nearby Shijo-Kawaramachi
Variety of foods, each 500 JY max, beer (380ml) 600 JY, Japanese Sake (180 ml) 300 JY. [http://gourmet.yahoo.co.jp/0005160393/]

(2) TAKENAWA, Tel. 075-231-6878, Kiyamachi-Oike-Agaru
Chose dishes on the counter, a bit expensive than B-1. A beautiful female owner “MIKI” will serve for you. [http://www.onozomi.com/newshop/0407_4.html]

(3) Vicunya, Tel. 075-231-6440, Kiyamachi-Oike-Sagaru
Mexican foods and drinks. The husband of MIKI in (2) operates this pub. His Latin singing is quite good, if you are lucky. [http://www.kyoto.zaq.ne.jp/vicuna/]

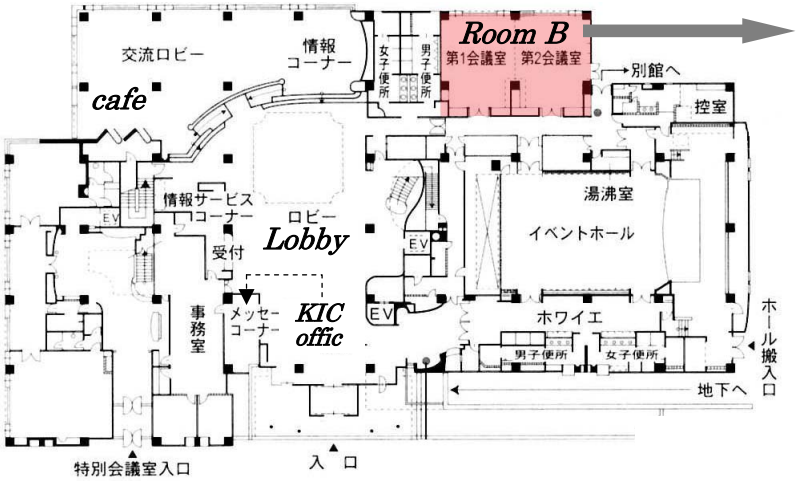
(4) HANANO, Tel. 075-541-4667, Shijo-Hanamikoji-Agaru
Rather expensive but less than 8000 JY per person. Beautiful sisters “KEIKO” and “TOSHIKO” serve for you. [http://gourmet.yahoo.co.jp/0005169367/]

F2. Travel Information Desk

Travel information desk will be opened by Nippon Travel Agency at the registration desk throughout the conference period. For local tours and technical tours reservation, please contact personnel at the travel information desk.

Kyoto International Community House (KIC) Floor Guide

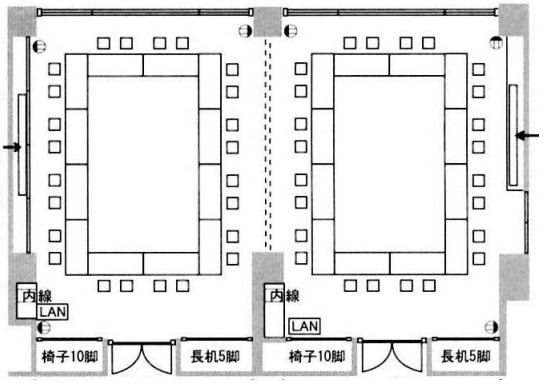
Ground floor (1F)



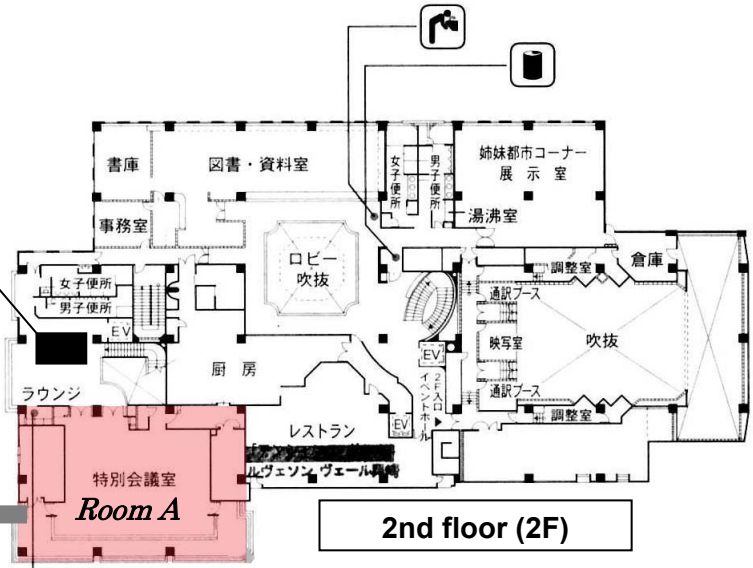
Entrance to Room A

Main Entrance (Room B / 1F, Room C / 3F)

Room **B :** Conference Rooms 1 and 2

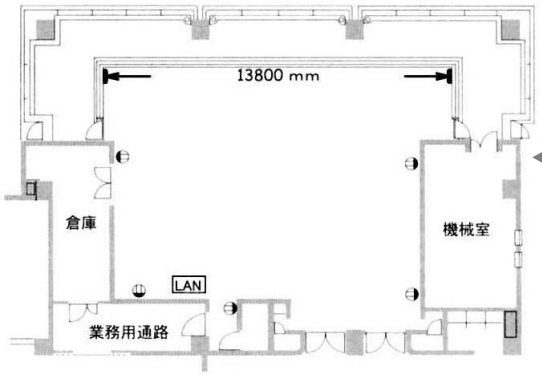


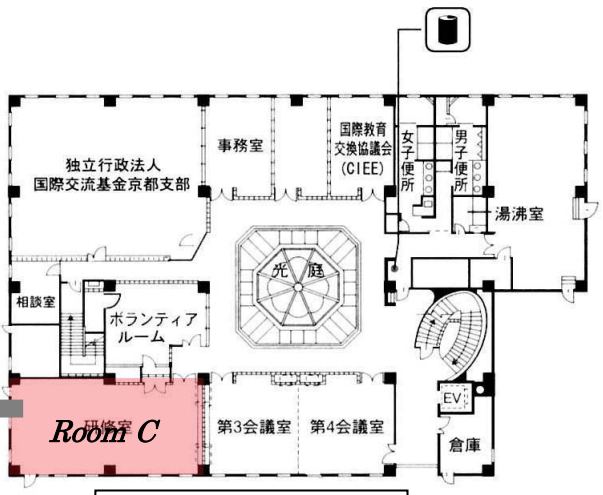
Registration desk / travel agency



2nd floor (2F)

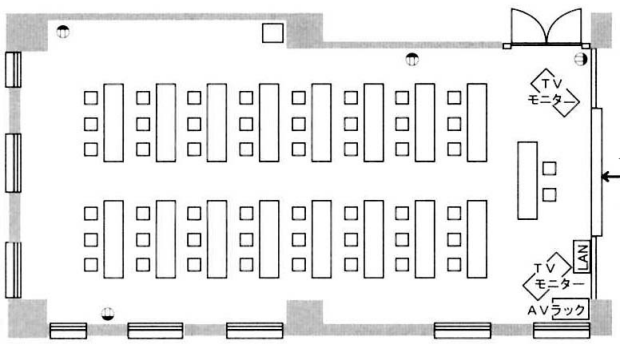
Room **A :** Special Conference Room





3nd floor (3F)

Room **C :** Seminar Room



Conference Program

Tuesday, June 2, 2009

Kyoto Century Hotel, Kyoto

17:00 – 20:00	Registration at the entrance of Room Zui-Ho
18:00 – 19:00	Opening Session at Room Zui-Ho
19:00 – 21:00	Welcome Reception at Room Zui-Ho

Wednesday, June 3, 2009

Kyoto International Community House

9:20 – 11:00	Keynote Speech/Chair: T. Funaki	Room A

Keynote speech: Transient Phenomena in Power Cable Systems by Prof. K. Matsuura

9:20 – 11:00	Session 1B/Chair: V. Terzija System Protection I	Room B

1B-1 (21) Directional Relay Co-ordination in Ungrounded MV Radial Distribution Networks Using a RTDS
A. A. van der Meer, Delft University of Technology, The Netherlands
M. Popov, Delft University of Technology, The Netherlands

1B-2 (24) A Wavelet-Based Method for Detection and Classification of Single and Crosscountry Faults in Transmission Lines
F. B. Costa, Federal University of Campina Grande, Brazil
B. A. Souza, Federal University of Campina Grande, Brazil
N. S. D. Brito, Federal University of Campina Grande, Brazil

1B-3 (49) Measured Impedance by Distance Relay Elements in a Phase to Phase Fault
H. Shateri, Iran University of Science and Technology, Iran
S. Jamali, Iran University of Science and Technology, Iran

1B-4 (71) Faulty Phase Identification Using Probability Tail Function for EHV Transmission Systems
N. I. Elkalashy, Helsinki University of Technology, Finland
M. Lehtonen, Helsinki University of Technology, Finland

1B-5 (329) A New Transient Impedance-Based Algorithm for Earth Fault Detection in Medium Voltage Networks
M. F. Abdel-Fattah, Helsinki University of Technology, Finland
M. Lehtonen, Helsinki University of Technology, Finland

9:20 – 11:00	Session 1C/Chair: S. Carneiro Jr. Switching and Fault Transients I	Room C

1C-1 (12) Transient Design Studies for the Reinforcement of Hydro-Québec 735kV Series-Compensated Transmission System
Q. Bui-Van, Hydro-Québec, TransÉnergie, Canada
F. Rochon, Hydro-Québec, TransÉnergie, Canada
Y. Filion, Hydro-Québec, TransÉnergie, Canada
J. Letèf, Hydro-Québec, TransÉnergie, Canada
M. Dusseault, Hydro-Québec, TransÉnergie, Canada

1C-2 (16) Proposition of a Half-Wave Length Energization Case Test
M. C. Tavares, University of Campinas, Brazil
C. Portela, Federal University of Rio de Janeiro, Brazil

1C-3 (22) Simulation and Analysis of Switching Surge for a 161kV Submarine Cable System
S. J. Hsiao, National Kaohsiung University of Applied Sciences, Taiwan
M. T. Chen, National Kaohsiung University of Applied Sciences, Taiwan

1C-4 (149) Adaptative Single-Phase Autoreclosing Based on Secondary Arc Voltage Harmonic Signature
A. A. Montanari, University of Campinas, Brazil
M. C. Tavares, University of Campinas, Brazil
C. M. Portela, Federal University of Rio de Janeiro, Brazil

1C-5 (161) Overvoltages While Switching Off a HV Transformer with Arc-Suppression Coil at No-Load
K. Teichmann, University of Siegen, Germany
M. Kizilcay, University of Siegen, Germany

11:30 – 13:10	Session 2A/Chair: M. Popov Fault location I	Room A

2A-1 (30) ATP-EMTP Investigation of Fault Location Algorithm for use with Current Differential Protective Relays of Series-Compensated Transmission Line
M. M. Saha, ABB, Sweden
E. Rosolowski, Wroclaw University of Technology, Poland
J. Izykowski, Wroclaw University of Technology, Poland

2A-2 (43) New Approach for Fault Location on Transmission Lines Not Requiring Line Parameters
Z. M. Radojevic, University of Belgrade, Serbia
C. H. Kim, Sungkyunkwan University, Korea
M. Popov, Delft University of Technology, The Netherlands
G. Preston, The University of Manchester, UK
V. Terzija, The University of Manchester, UK

2A-3 (73) ATP-EMTP Investigation of Detection of Fault Position with Respect to the Compensating Bank in Series Compensated Line by Determining the Contents of DC Components in Phase Currents
J. Izykowski, Wroclaw University of Technology, Poland
P. Mazniewski, Wroclaw University of Technology, Poland
E. Rosolowski, Wroclaw University of Technology, Poland
P. Balcerek, ABB, Poland
M. Fulczyk, ABB, Poland

2A-4 (105) Faulted Branch Identification on Power Distribution Systems Under Noisy Environment
K. R. Caino de Oliveira, University of Sao Paulo, Brazil
R. H. Salim, University of Sao Paulo, Brazil
A. Shuck Jr., Federal University of Rio Grande do Sul, Brazil
A. S. Bretas, Federal University of Rio Grande do Sul, Brazil

11:30 – 13:10	Session 2B/Chair: F. Rachidi Transmission Lines and Cables I	Room B

2B-1 (9) An Investigation of an Equivalent Conductor Plate Representing Earth for a Surge Analysis
A. Ametani, Doshisha University, Japan
M. Nishitsuji, Doshisha University, Japan
N. Nagaoka, Doshisha University, Japan
Y. Baba, Doshisha University, Japan
S. Okabe, Doshisha University, Japan

2B-2 (11) Propagation Characteristics of Power Line Communication Signals Along a Power Cable
N. Okazima, Doshisha University, Japan
Y. Baba, Doshisha University, Japan
N. Nagaoka, Doshisha University, Japan
A. Ametani, Doshisha University, Japan
K. Temma, Mitsubishi Electric Corp., Japan
T. Shimomura, Mitsubishi Electric Corp., Japan

2B-3 (86) Surge Propagation on Two Conductors System Consisting of an Overhead Wire and a Grounding Conductor
S. Sekioka, Shonan Institute of Technology, Japan

2B-4 (164) Interaction of a HVDC System with 400-kV AC Systems on the Same Tower
M. Kizilcay, University of Siegen, Germany
A. Agdemir, University of Siegen, Germany
M. Lösing, RWE Transportnetz Strom, Germany

2B-5 (175) A Robust Multi-Conductor Transmission Line Model to Simulate EM Transients in Underground Cables
H. M. J. De Silva, University of Manitoba, Canada
L. M. Wedepohl, University of Manitoba, Canada
A. M. Gole, University of Manitoba, Canada

11:30 – 13:10	Session 2C/Chair: S. Denneti ère Rotating Machines	Room C

2C-1 (31) A Real-Time Model for Testing Stator-Ground Fault Protection Schemes of Synchronous Machines
A. B. Dehkordi, University of Manitoba, Canada
A. M. Gole, University of Manitoba, Canada
T. L. Maguire, RTDS Technologies Inc., Canada
P. Neti, General Electric, USA

2C-2 (63) Permeance Network Based Real-Time Induction Machine Model
B. Asghari, University of Alberta, Canada
V. Dinavahi, University of Alberta, Canada

2C-3 (124) Representation of a Group of Three-phase Induction Motors Using Per Unit Aggregation Model
A. Kunakorn, King Mongkut's Inst. of Tech. Ladkrabang, Thailand
T. Banyatnopparat, King Mongkut's Inst. of Tech. Ladkrabang, Thailand

2C-4 (228) Modeling and Simulation of the Startup of a Pumped Storage Power Plant Unit
U. Karaagac, École Polytechnique de Montréal, Canada
J. Mahseredjian, École Polytechnique de Montréal, Canada
S. Dennetière, EDF R&D, France

2C-5 (264) Current Differential Protection of Alternator Stator Winding
N. W. Kinhekar, Sardar Patel College of Engineering, India
S. Daingade, Sardar Patel College of Engineering, India
A. Kinhekar, Shree Bhaugubai Mafatlal Polytechnic, India

14:50 – 16:30 Session 3A/Chair: T. Noda Room A
Real Time Digital Simulators and TNAs

3A-1 (27) FPGA Implementation of a Modified Two-Layer Network Equivalent for Real-Time Simulation of Electromagnetic Transients
M. Matar, University of Toronto, Canada
R. Iravani, University of Toronto, Canada

3A-2 (239) A Method to Stabilize a Power Hardware-in-the-loop Simulation of Inductor Coupled Systems
M. Hong, Osaka University, Japan
S. Horie, Osaka University, Japan
Y. Miura, Osaka University, Japan
T. Ise, Osaka University, Japan
C. Dufour, Opal-RT Technologies Inc., Canada

3A-3 (317) A Common User Interface for Offline and Real-time Simulation of Transients
M. Giroux, Opal-RT Technologies Inc., Canada
J. Mahseredjian, École Polytechnique de Montréal, Canada

3A-4 (325) A Modern and Open Real-Time Digital Simulator of Contemporary Power Systems
J. Bélanger, Opal-RT Technologies Inc., Canada
L. A. Snider, Tulane University in New Orleans, USA
J. N. Paquin, Opal-RT Technologies Inc., Canada
C. Pirolli, Opal-RT Technologies Inc., Canada
W. Li, Opal-RT Technologies Inc., Canada

14:50 – 16:30 Session 3B/Chair: M. Ishii Room B
Lightning Surges I

3B-1 (26) The Protection Against Lightning of an Overhead Line Uprated from 225 kV to 400 kV
A. Xémard, EDF R&D, France
S. Dennetière, EDF R&D, France
I. Uglesic, University of Zagreb, Croatia
V. Milardic, University of Zagreb, Croatia
B. Milesevic, University of Zagreb, Croatia
P. Grand, RTE, France
F. Sauvegrain, RTE, France
P. Stevenin, RTE, France
M. Mesic, HEP, Croatia

3B-2 (42) Reduction of Flashovers on 220 kV Double-Circuits Line
I. Uglesic, University of Zagreb, Croatia
A. Xémard, EDF R&D, France
V. Milardic, University of Zagreb, Croatia
B. Milesevic, University of Zagreb, Croatia
B. Filipovic-Grcic, University of Zagreb, Croatia
I. Ivankovic, HEP-OPS, Croatia

3B-3 (81) Numerical Electromagnetic Field Analysis of Transient Magnetic Fields in a Nacelle Caused by a Lightning Stroke to a Wind Turbine Generator System
K. Yamamoto, Kobe City College of Technology, Japan
T. Chikara, Doshisha University, Japan
A. Ametani, Doshisha University, Japan

3B-4 (162) Mitigation of Back-Flashovers for 110-kV Lines at Multi-Circuit Overhead Line Towers
M. Kizilcay, University of Siegen, Germany

3B-5 (287) Impact of Grounding Systems Frequency Dependency on Lightning Arresters Transient Response
K. Sheshyekani, Amirkabir University of Technology, Iran
F. Rachidi, Swiss Federal Institute of Technology, Switzerland
S. H. H. Sadeghi, Amirkabir University of Technology, Iran
R. Moini, Amirkabir University of Technology, Iran
M. Paolone, University of Bologna, Italy

14:50 – 16:30	Session 3C/Chair: A. Gomez-Exposito Power System Dynamics and Control	Room C

3C-1 (39) Development of Synchrophasors Measuring Method for Power Systems
K. Seki, Mitsubishi Electric Corp., Japan

3C-2 (44) Multiple Decentralized Stabilizers for Robust Control in Power Systems Using an H8 Criteria
A. C. de Castro, Federal Inst. of Education, Science and Technology, Brazil
J. M. Araújo, Federal Inst. of Education, Science and Technology, Brazil
E. T. F. Santos, Federal Inst. of Education, Science and Technology, Brazil
F. G. S. Silva, Federal Inst. of Education, Science and Technology, Brazil
C. S. de Araújo, Federal University of Paraiba, Brazil

3C-3 (47) Plant Identification and Tuning Controls an EMTP case
L. Gérin-Lajoie, Hydro-Québec, TransÉnergie, Canada

3C-4 (179) Study on the Improvement of the Special Protection Scheme (SPS) in the Korean Power System
J. Shin, KEPRI, Korea
S. Nam, KEPRI, Korea
S. Cha, KEPRI, Korea
J. Lee, KEPRI, Korea
T. K. Kim, KEPRI, Korea
J. E. Kim, KEPCO, Korea
T. O. Kim, KEPCO, Korea
H. Song, Seoul National University of Technology, Korea

Thursday, June 4, 2009

9:20 – 11:00	Session 4A/Chair: T. Funabashi SSR	Room A

4A-1 (6) Power Electronic Devices for Damping Torsional Vibrations
A. M. Miri, University of Karlsruhe, Germany
T. Zöller, University of Karlsruhe, Germany
T. Leibfried, University of Karlsruhe, Germany

4A-2 (13) Effect of Torsional Mode Coupling on TCSC Related Subsynchronous Resonance Studies
P. Vuorenpää, Tampere University of Technology, Finland
T. Rauhala, Fingrid, Finland
P. Järventausta, Tampere University of Technology, Finland

4A-3 (116) HVDC-Generator-Turbine Torsional Interaction Studies Using A Linearized Model With Dynamic Network Representation
C. Karawita, University of Manitoba, Canada
U. D. Annakkage, University of Manitoba, Canada

4A-4 (213) Torsional Torque Suppression of Decentralized Generators Based on H8 Control Theory
T. Goya, University of the Ryukyus, Japan
E. Omine, University of the Ryukyus, Japan
T. Senjyu, University of the Ryukyus, Japan
A. Yona, University of the Ryukyus, Japan
N. Urasaki, University of the Ryukyus, Japan
T. Funabashi, Meidensha Corporation, Japan

4A-5 (292) Converter Based Controlled Reactance for Damping Subsynchronous Resonance
A. C. Borré, Federal University of Rio de Janeiro, Brazil
R. F. S. Dias, Federal University of Rio de Janeiro, Brazil
A. C. S. Lima, Federal University of Rio de Janeiro, Brazil
E. H. Watanabe, Federal University of Rio de Janeiro, Brazil

9:20 – 11:00	Session4B/Chair: H. K. Høidalen Power Quality I	Room B

4B-1 (3) Power Quality Transients Categorization using Higher-Order Statistics and Neural Networks
J. J. G. De la Rosa, University of Càdiz, Spain
J. M. Sierra, University of Càdiz, Spain
A. Moreno, University of Cordoba, Spain
C. G. Puntonet, University of Granada, Spain

4B-2 (54) Current Measurement-Based Approach for Tracking Transients Produced by Utility Shunt Capacitor Switching
G. W. Chang, National Chung Cheng University, Taiwan
J. P. Chao, National Chung Cheng University, Taiwan

4B-3 (88) A Pantograph Arc Model for Harmonic Analysis of High-Speed Railway Traction System
G. W. Chang, National Chung Cheng University, Taiwan
H. M. Huang, National Chung Cheng University, Taiwan
Y. J. Liu, National Chung Cheng University, Taiwan

4B-4 (113) Development of an On-line Transient Classification System
N. Perera, University of Manitoba, Canada
A. D. Rajapakse, University of Manitoba, Canada
D. Muthumuni, Manitoba HVDC Research Center, Canada
R. P. Jayasinghe, Manitoba HVDC Research Center, Canada

4B-5 (245) An Efficient Feature Extraction Method for Classification of Power Quality Disturbances
H. Eristi, Tunceli University, Turkey
Y. Demir, Firat University, Turkey

9:20 – 11:00	Session 4C/Chair: I. Uglesic Transformers	Room C

4C-1 (18) Analysis of Voltage Distribution in Transformer Windings During Circuit Breaker Prestrike
M. Popov, Delft University of Technology, The Netherlands
R. P. P. Smeets, KEMA, The Netherlands
L. van der Sluis, Delft University of Technology, The Netherlands
H. de Herdt, Pauwels Trafo Belgium, Belgium
J. Declercq, Pauwels Trafo Belgium, Belgium

4C-2 (19) Computation of Inter-turn Voltages in Transformer Windings with Interconnected Distribution Cable
G. Hoogendorp, Delft University of Technology, The Netherlands
M. Popov, Delft University of Technology, The Netherlands
L. van der Sluis, Delft University of Technology, The Netherlands

4C-3 (77) Partial Discharge Location in Transformers through Application of MTL Model
S. M. Hassan Hosseini, Islamic Azad University South-Tehran Branch, Iran
M. Ghafarian, Sharif University of Technology, Iran
M. Vakilian, Sharif University of Technology, Iran
G. B. Gharehpetian, Amirkabir University of Technology, Iran
F. Forouzbakhsh, University of Tehran, Iran

4C-4 (151) dU/dt Protection for Distribution Transformers
W. Piasecki, ABB, Poland
M. Ostrogórska, ABB, Poland
M. Florkowski, ABB, Poland
M. Fulczyk, ABB, Poland
P. Klys, ABB, Poland

4C-5 (257) Electrical Transient Interaction between
Transformers and Power System – Brazilian Experience
U. R. R. Massaro, ELETROSUL, Brazil
R. Antunes, ELETROSUL, Brazil

11:30 – 13:10	Session 5A/Chair: H. Dommel Ferroresonance and Inrush Currents	Room A

5A-1 (139) Systematic Switching Study of Transformer Inrush Current: Simulations and Measurements
N. Chiesa, Norwegian University of Science and Technology, Norway
H. K. Høidalen, Norwegian University of Science and Technology, Norway

5A-2 (152) Mitigating Ferroresonance in HV Inductive Transformers
W. Piasecki, ABB, Poland
M. Stosur, ABB, Poland
M. Florkowski, ABB, Poland
M. Fulczyk, ABB, Poland
B. Lewandowski, ABB, Poland

5A-3 (217) Impacts of Various Representations of Core Saturation Curve on Ferroresonance Behavior of Transformers
A. Rezaei-Zare, University of Toronto, Canada
R. Iravani, University of Toronto, Canada

5A-4 (222) Control of Inrush Transients During the Restoration of an Islanded 735 kV System
M. Alawie, Hydro-Québec, TransÉnergie, Canada
Q. Bui-Van, Hydro-Québec, TransÉnergie, Canada
A. Dumas, Hydro-Québec, TransÉnergie, Canada

5A-5 (316) Transformer Inrush is Over: An Experience with a 100MVA, 230/138 kV Three-phase Transformer Controlled Energizing
H. S. Bronzeado, Companhia Hidro Elétrica do Sao Francisco, Brazil
S. O. Pinto, Companhia Hidro Elétrica do Sao Francisco, Brazil
P. Jonsson, ABB, Sweden
J. C. de Oliveira, Federal University of Uberlandia, Brazil
M. L. R. Chaves, Federal University of Uberlandia, Brazil

11:30 – 13:10	Session 5B/Chair: T. Funaki FACTS	Room B

5B-1 (58) Measured Impedance for Faults on Next Line and Second Circuit of a Double Circuit Line in Presence of TCSC
A. Kazemi, Iran University of Science and Technology, Iran
S. Jamali, Iran University of Science and Technology, Iran
H. Shateri, Iran University of Science and Technology, Iran

5B-2 (127) Reactive Power Compensation Characteristics of a New SVC for Industry Custom Power System
F. Liu, Waseda University, Japan
R. Yokoyama, Waseda University, Japan
Y. Zhou, Tepco Systems Co., Japan
Y. Li, University of Dortmund, Germany
M. Wu, Central South University, China

5B-3 (155) Analysis of Impact of UPFC on Single Pole Auto Reclosures
W. H. Jang, Sungkyunkwan University, Korea
S. P. Ahn, Korea Electrotechnology Research Institute, Korea
C. H. Kim, Sungkyunkwan University, Korea
R. K. Aggarwal, University of Bath, UK

5B-4 (192) Small-Signal Modeling of Power Electronic Converters with Resonant Controllers
P. W. Lehn, University of Toronto, Canada
S. Podrucky, University of Toronto, Canada

5B-5 (269) Non Conventional Transmission Line with FACTS in Electromagnetic Transient Programs
R. F. S. Dias, Federal University of Rio de Janeiro, Brazil
A. C. S. Lima, Federal University of Rio de Janeiro, Brazil
C. Portela, Federal University of Rio de Janeiro, Brazil
M. Aredes, Federal University of Rio de Janeiro, Brazil

11:30 – 13:10	Session 5C/Chair: M. Paolone Fault location II	Room C

5C-1 (40) Localization of Phase-to-Phase Faults on a Medium Voltage Feeder with Distributed Generation
J. I. Marvik, Norwegian Univ. of Science and Technology, Norway
H. K. Høidalen, Norwegian Univ. of Science and Technology, Norway
A. Petterteig, SINTEF, Norway

5C-2 (128) Transmission line Protection Using Synchronized Sampling and Transient Waveforms
D. Khalifa, Egyptian Electricity Transmission Company, Egypt
M. Kezunovic, Texas A&M University, USA
O. E. Gouda, Cairo University, Egypt
D. H. Mostafa, Egyptian Electricity Transmission Company, Egypt

5C-3 (226) Detection of Single-Line-to-Ground Faults Through Impedance in Multi-Ring Distribution Network Using Artificial Neural Network
M. M. Sabry, Consolidated Contractors Int. Co., Untd. Arab Emirates
M. H. Abdel-Rahman, Mansoura University, Egypt

5C-4 (313) Integrated Use of Time-Frequency Wavelet Decompositions for Fault Location in Distribution Networks: Theory and Experimental Validation
A. Borghetti, University of Bologna, Italy
M. Bosetti, University of Bologna, Italy

M. Paolone, University of Bologna, Italy
A. Abur, Northeastern University, USA

14:50 – 16:30 Session 6A/Chair: M. C. Tavares Room A
Switching and Fault Transients II

6A-1 (190) Analysis of Circuit Breaker Application Based on Transient Recovery Voltage Using Frequency Domain Techniques
D. Sinder, Brazilian ISO, Brazil
A. C. S. Lima, Federal University of Rio de Janeiro, Brazil
S. Carneiro Jr., Federal University of Rio de Janeiro, Brazil
A. C. Carvalho, Brazilian ISO, Brazil

6A-2 (191) On Applying Controlled Switching to Transmission Lines: Case Studies
K. M. C. Dantas, Federal University of Campina Grande, Brazil
W. L. A. Neves, Federal University of Campina Grande, Brazil
D. Fernandes Jr., Federal University of Campina Grande, Brazil
G. A. Cardoso, Federal University of Campina Grande, Brazil
L. C. Fonseca, Companhia Hidro Elétrica do Sao Francisco, Brazil

6A-3 (243) Transient Recovery Voltage Influenced by Transformer Delta Winding in UHV Transmission System
Y. Yamagata, Tokyo electric Power Co., Japan
M. Kosakada, Toshiba Co., Japan
M. Toyoda, Toshiba Co., Japan
S. Nishiwaki, Toshiba Co., Japan

6A-4 (254) Circuit Breaker Switching Transients at Arc Furnace Installation
M. Maksic, University of Ljubljana, Slovenia
D. Matvoz, EIMV, Slovenia
J. Kosmac, EIMV, Slovenia
I. Papic, University of Ljubljana, Slovenia

6A-5 (275) TRV Investigations to Assess the Suitability of 132kV Circuit Breakers for an Offshore Wind Farm Connection
O. Nanka-Bruce, Parsons Brinckerhoff, UK
S. Nurse, Parsons Brinckerhoff, UK
M. Jones, Parsons Brinckerhoff, UK
V. Levi, Electricity North West Limited, UK

14:50 – 16:30 Session 6B/Chair: J. Mahseredjian Room B
Power Electronics

6B-1 (251) Computer Simulation of Wind Power Systems: Power Electronics and Transient Stability Analysis
R. Melício, University of Beira Interior, Portugal
V. M. F. Mendes, Instituto Superior de Engenharia de Lisboa, Portugal
J. P. S. Catalao, University of Beira Interior, Portugal

6B-2 (273) Parameter Estimation of a Nonlinear EDLC Model for EMTP Simulation
N. Nagaoka, Doshisha University, Japan
S. Fujiyama, Doshisha University, Japan
H. Nonoyama, Doshisha University, Japan
A. Ametani, Doshisha University, Japan

6B-3 (274) Testing Firing Pulse Controls for a VSC-based HVDC Scheme with a Real Time Timestep < 3 µs
P. A. Forsyth, RTDS Technologies Inc., Canada
T. L. Maguire, RTDS Technologies Inc., Canada
D. Shearer, ABB, Sweden
D. Rydmell, ABB, Sweden

6B-4 (281) Considering Power Losses of Switching Devices in Transient Simulations through a Simplified Circuit Model
J. M. Mauricio, University of Seville, Spain
J. M. Maza-Ortega, University of Seville, Spain
A. Gomez-Exposito, University of Seville, Spain

6B-5 (328) Single-Phase Active Power Filter Design Using EMTP Simulation
H. Y. Lee, Myongji University, Korea
M. B. Shim, Myongji University, Korea
J. H. Lee, Myongji University, Korea
B. M. Han, Myongji University, Korea

14:50 – 16:30 Session 6C/Chair: M. T. Correia de Barros Room C
Simulation Tools

6C-1 (38) Comparison of Measured Transient Overvoltages in the Collection Grid of Nysted Offshore Wind Farm with EMT Simulations
I. Arana, DONG Energy, Denmark
J. Holbøll, Technical University of Denmark, Denmark
T. Sørensen, DONG Energy, Denmark
A. H. Nielsen, Technical University of Denmark, Denmark
P. Sørensen, Technical University of Denmark, Denmark
O. Holmstrøm, DONG Energy, Denmark

6C-2 (80) Core Structure and its Association with Transformer Susceptibility towards Ferroresonance
C. A. Charalambous, The University of Manchester, UK
Z. D. Wang, The University of Manchester, UK
P. Jarman, National Grid, UK
M. Osborne, National Grid, UK

6C-3 (92) Sequential Motor Dynamic Acceleration and Re-Acceleration Simulations: Comparison of ETAP and EMTP-RV Software
L. R. Manio, Eltechs Engineering & Consulting Co., Philippines
K. Kameda, Eltechs Engineering & Consulting Co., Japan
J. J. Dai, Operation Technology Inc., USA
H. Iki, Seikei University, Japan
K. Katayama, Eltechs Engineering & Consulting Co., Japan
Y. Uriu, Seikei University, Japan

6C-4 (104) Multipurpose Power System Simulator: Implementation Based on Modern Principles
I. Naumkin, Siberian Electric Power Research Institute, Russia
M. Balabin, Siberian Electric Power Research Institute, Russia
N. Lavrushenko, Siberian Electric Power Research Institute, Russia
R. Naumkin, Siberian Electric Power Research Institute, Russia

6C-5 (298) Results using Wind Turbine Models for the Certification Process required by the Grid Codes
E. Gómez-Lázaro, Universidad de Castilla-La Mancha, Spain
J. A. Fuentes, Universidad Politécnica de Cartagena, Spain
A. Molina-García, Universidad Politécnica de Cartagena, Spain
F. Jiménez, Gamesa Innovation and Technology, Spain

Friday, June 5, 2009

9:20 – 11:00 Session 7A/Chair: C. A. Nucci Room A
Distributed Generation

7A-1 (20) Dynamic Model and Control of a Microgrid with Passive Loads
M. Popov, Delft University of Technology, The Netherlands
H. Karimi, Sharif University of Technology, Iran
H. Nikkhajoei, Al-Ain Univeristy, United Arab Emirates
V. Terzija, The University of Manchester, UK

7A-2 (130) Coordination Between Distributed Generation Stability and Undervoltage Protection Requirements at DG Interconnection Point
I. Xyngi, Delft University of Technology, The Netherlands
M. Popov, Delft University of Technology, The Netherlands

7A-3 (134) A Steady-State Model of the Photovoltaic System in EMTP
H. I. Cho, Sungkyunkwan University, Korea
S. M. Yeo, Sungkyunkwan University, Korea
C. H. Kim, Sungkyunkwan University, Korea
V. Terzija, The University of Manchester, UK
Z. M. Radojevic, University of Belgrade, Serbia

7A-4 (156) An improved Active Islanding Detection Technology for Grid-connected Solar Photovoltaic System
H. T. Yang, National Cheng Kung University, Taiwan
P. C. Peng, Chung Yuan Christian University, Taiwan
T. Y. Tsai, Chung Yuan Christian University, Taiwan
Y. Y. Hong, Chung Yuan Christian University, Taiwan

7A-5 (248) Investigation of DFIG with Fault Ride-Through Capability in Weak Power Systems
C. Rahmann, RWTH Aachen University, Germany
H. J. Haubrich, RWTH Aachen University, Germany
L. Vargas, University of Chile, Chile
M. B. C. Salles, University of Sao Paulo, Brazil

9:20 – 11:00	Session 7B/Chair: L. Naredo System Protection II	Room B

7B-1 (35) High Impedance Fault Detection in Distribution Networks by Combining the Classifiers
M. Sarlak, Iran University of Science and Technology, Iran
S. M. Shahrtash, Iran University of Science and Technology, Iran

7B-2 (59) Applying Neighborhood Rough Set Classifier to Current Traveling Waves for High Impedance Fault Detection
M. Sarlak, Iran University of Science and Technology, Iran
S. M. Shahrtash, Iran University of Science and Technology, Iran

7B-3 (60) Analysis of the Behavior of one Digital Distance Relay Under Islanding Condition with ATP
C. R. Saldana, UTE, Uruguay
G. R. Calzolari, UTE, Uruguay

7B-4 (208) Fast Acting, Low Impedance Type Bus Bar Protection Algorithms with Enhanced Sensitivity for Internal Fault and Higher Stability for External Faults and CT Open Circuit Conditions
A. Khanna, ATKINS Ltd, UK

7B-5 (330) A Novel Transient Current-Based Differential Algorithm for Earth Fault Detection in Medium Voltage Distribution Networks
M. F. Abdel-Fattah, Helsinki University of Technology, Finland
M. Lehtonen, Helsinki University of Technology, Finland

9:20 – 11:00	Session 7C/Chair: R. Iravani Solution Methods and Modeling Techniques	Room C

7C-1 (10) An Improved Arbitrary-Radius-Wire Representation for FDTD Electromagnetic and Surge Calculations
Y. Taniguchi, Doshisha University, Japan
Y. Baba, Doshisha University, Japan
N. Nagaoka, Doshisha University, Japan
A. Ametani, Doshisha University, Japan

7C-2 (48) Parameter Identification Technique for a Dynamic Metal-Oxide Surge Arrester Model
G. R. S. Lira, Federal University of Campina Grande, Brazil
D. Fernandes Jr., Federal University of Campina Grande, Brazil
E. G. Costa, Federal University of Campina Grande, Brazil

7C-3 (110) A Steady-State and Time-Domain Model of the Coupling between Electrically Conductive Structures
J. G. Roumy, IREQ, Canada
O. Saad, IREQ, Canada
J. Michaud, EDF R&D, France

7C-4 (227) Simulation of an Extra Large Network in EMTP: from Electromagnetic to Electromechanical Transients
L. Gérin-Lajoie, Hydro-Québec, TransÉnergie, Canada
J. Mahseredjian, École Polytechnique de Montréal, Canada

7C-5 (309) Implementation of a New Magnetizing Branch in EMTP-RV Using the A(x) Model
M. Lambert, École Polytechnique de Montréal, Canada
J. Mahseredjian, École Polytechnique de Montréal, Canada
L. A. Dessaint, École de Technologie Superieure, Canada
A. Gaudreau, IREQ, Canada

11:30 – 13:10	Session 8A/Chair: A. Ametani Power Quality II	Room A

8A-1 (125) Investigating Lightning-Induced Overvoltages Transmitted to Customer Side
N. Sabiha, Helsinki University of Technology, Finland
M. Lehtonen, Helsinki University of Technology, Finland

8A-2 (201) Voltage Total Harmonic Distortion Analysis through Transformer's Characteristics and Energy Use Data
W. E. Souza, LACTEC -Centro Politécnico da UFPR, Brazil
A. R. Aoki, LACTEC -Centro Politécnico da UFPR, Brazil
A. Chaves Neto, Paraná Federal University, Brazil
R. A. Peniche, Paraná Energy Company, Brazil
M. R. Ortega, Paraná Energy Company, Brazil

8A-3 (234) A Three-Phase Harmonic Power Flow Algorithm Based on A Hybrid Approach
K. L. Lian, CRIEPI, Japan
T. Noda, CRIEPI, Japan

8A-4 (252) IVTs Behavior Characterization in Switching Transients
M. C. Falvo, University of Rome "La Sapienza", Italy
U. Grasselli, University of Rome "La Sapienza", Italy

R. Lamedica, University of Rome "La Sapienza", Italy
G. Maranzano, Met.Ro. S.p.A., Italy

11:30 – 13:10	Session 8B/Chair: S. Sekioka Transmission Lines and Cables II	Room B

8B-1 (15) Measurements for Validation of High Voltage Underground Cable Modelling
U. S. Gudmundsdottir, Aalborg University, Denmark
C. L. Bak, Aalborg University, Denmark
W. T. Wiechowski, Energinet, Denmark
K. Søgaard, Energinet, Denmark
M. R. Knardrupgård, Energinet, Denmark

8B-2 (25) Comparison between Measurement and ATP Computation on Traveling Wave Propagation Characteristics of Long Power Cable
S. Nishiwaki, Toshiba Co., Japan
T. Koshizuka, Toshiba Co., Japan
O. Hosokawa, Toshiba Co., Japan
K. Yamamoto, Toshiba Co., Japan

8B-3 (87) Methodologies to Determine fhe Fault Current through an OPGW (Optical Ground Wire)
H. R. Disenfeld, Transener S.A., Argentina

8B-4 (308) Mho Relay for Protection of Series Compensated Transmission Lines
A. B. Shah, Concordia University, Canada
V. K. Sood, University of Ontario, Canada
O. Saad, IREQ, Canada

8B-5 (314) Modeling On-line Three-phase PD Monitoring System for MV Overhead Covered-Conductors
G. M. Hashmi, Helsinki University of Technology, Finland
M. Isa, Helsinki University of Technology, Finland
M. Lehtonen, Helsinki University of Technology, Finland

11:30 – 13:10	Session 9A/Chair: M. Kizilcay Switching and Fault Transients III	Room A

9A-1 (118) Circuit Breaker Model using Serially Connected 3 Arc Models for EMTP Simulation
T. Koshizuka, Toshiba Co., Japan
T. Shinkai, Toshiba Co., Japan
K. Udagawa, Toshiba Co., Japan
H. Kawano, Toshiba Co., Japan

9A-2 (150) Secondary Arc Voltage and Current Harmonic Content for Field Tests Results
A. A. Montanari, University of Campinas, Brazil
M. C. Tavares, University of Campinas, Brazil
C. M. Portela, Federal University of Rio de Janeiro, Brazil
A. B. Camara, FURNAS Centrais Elétricas S.A., Brazil

9A-3 (173) Switching Overvoltage Analysis of 500 kV Transmission Line Between Nam Theun 2 and Roi Et 2
T. Keokhoungning, Electricete' Du Laos, Lao PDR
S. Premrudeeprechacharn, Chiang Mai University, Thailand
K. Ngamsanroaj, Sirikit Hydro Power Plant, Thailand

9A-4 (177) Transient Study for Single Phase Reclosing Using Arc Model on the Thailand 500 kV Transmission Lines from Mae Moh to Tha Ta Ko
K. Ngamsanroaj, Sirikit Hydro Power Plant, Thailand
S. Premrudeeprechacharn, Chiang Mai University, Thailand

9A-5 (286) Energization of Step-up Transformers for MV Windfarms: Description of the Methodology for the Modeling of the Equipment and its Validation by Onsite Tests
M. Rioual, EDF, France
J. C. Reveret, Ecole Speciale de Mécanique et d'Electricité, France

11:30 – 13:10	Session 9B/Chair: Y. Baba Lightning Surges II	Room B

9B-1 (41) Simulation and Analysis of Lightning Performance for 345 kV XLPE Cable
S. J. Hsiao, National Kaohsiung University of Applied Sciences, Taiwan
M. T. Chen, National Kaohsiung University of Applied Sciences, Taiwan

9B-2 (65) Frequency Domain Modeling of Transmission Lines Excited by Nearby Lightning Strokes
P. Gómez, Instituto Politécnico Nacional, Mexico
J. C. Escamilla, CINVESTAV, Mexico

9B-3 (154) Accuracy of Lightning Surge Analysis of Tower Surge Response
N. Itamoto, Hokuriku Electric Power Co., Japan
H. Kawamura, Hokuriku Electric Power Co., Japan
K. Shinjo, Hokuriku Electric Power Co., Japan
H. Motoyama, Central Research Institute of Electric Power Industry, Japan
M. Ishii, University of Tokyo, Japan

9B-4 (250) A Simplified Analytical Model for Positive Upward Lightning Leaders Inception and Propagation
M. R. Bank Tavakoli, Amirkabir University of Technology, Iran
B. Vahidi, Amirkabir University of Technology, Iran
A. Mirzaee, University of Tehran, Iran
R. Shariatinasab, Amirkabir University of Technology, Iran

9B-5 (272) Induced Voltages to Wires Installed within a Building due to Direct Lightning
N. Nagaoka, Doshisha University, Japan
T. Kusuda, Doshisha University, Japan
Y. Iwakura, Doshisha University, Japan
A. Ametani, Doshisha University, Japan

Tutorial Course cooperated with CIGRE SC C4 on Electromagnetic Field Coupling with Transmission Lines from Classical Theory to Recent Enhancements

11:30 – 13:10	A/Chair: F. Rachidi Electromagnetic Field Coupling with Transmission Lines	Room C

TC-1 Application examples of numerical electromagnetic analysis to transmission lines
J. Smajec, ABB, Switzerland

TC -2 Electromagnetic Field Coupling with Transmission Lines: Introduction to Coupling Equations
M. Rubinstein, Haute Ecole d'Ingégnerie, Switzerland

14:50 – 16:30	B/Chair: M. Rubinstein Electromagnetic Field Coupling with Transmission Lines	Room C

TC-3 Electromagnetic Field Coupling with Transmission Lines: Recent Enhancements
F. Rachidi, Swiss Federal Institute of Technology, Lausanne, Switzerland

TC-4 Lightning-induced voltages: the effect of losses on their amplitude and wave-shape
C. Nucci, University of Bologna, Italy

Saturday, June 6, 2009

Miel-Parque Meeting room-A on the 5th floor

10:00 – 11:00	Closing Session

Closing Ceremony

- Local Organizing Committee Chairperson : Prof. A. Ametani
  Technical Program Committee Chairperson : Prof. M. T. Correia de Barros and Dr. M. Paolone
- Steering Committee Chair persons : Prof. H. W. Dommel and Prof. M. T. Correia de Barros
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T. Banyatnopparat, King Mongkut's Institute of Technology Ladkrabang, Thailand
124 - Session 2C - Rotating Machines

J. Bélanger, Opal-RT Technologies Inc., Canada
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A. Borghetti, University of Bologna, Italy
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