9th International Workshop on Earthquake Preparation Process

~ Observation, Validation, Modeling, Forecasting ~

Program

IWEP9

May 27 – 28, 2025

Chiba University, Chiba, Japan

9th International Workshop on Earthquake Preparation Process

~ Observation, Validation, Modeling, Forecasting ~ (IWEP9)

**Sponsor:**

・Chiba University, Japan

Co-sponsor:

・Center for Astronautical Physics and Engineering (CAPE),
  National Central University, Taiwan
・Center for Environmental Remote Sensing, Chiba University, Japan

Supported by:

・Chiba Convention Bureau and International Center (CCB-IC)
・Earthquake Prediction Society of Japan
・Electromagnetic Studies of Earthquakes and Volcanoes (EMSEV)
・National Central University, Taiwan
・Chapman University, US
・Peking University, China
・Southern University of Science and Technology, China
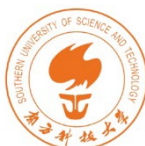
Organizing Committee:

Chairperson

Dr. Katsumi Hattori (Chiba University, Japan)

Secretary

Dr. Peng Han (Southern University of Science and Technology, China)

Dr. Rui Song (Chiba University, Japan)

Program Committee:

Chairperson

Dr. Jann-Yenq Liu (National Central University, Taiwan)

Dr. Dimitar Ouzounov (Chapman University, US)

Dr. Qinghua Huang (Peking University, China)

Dr. Xuhui Shen (National Space Science Center, CAS, China)

Dr. Toshiyasu Nagao (Tokai University, Japan)

Date: May 27 – 28, 2025

Venue: Room 101 & 102, the 1st floor of University Library / Academic Link Center Building I, Nishi-Chiba Campus, Chiba University, Chiba, Japan

Contacts: Dr. Katsumi Hattori (Chiba University, Japan)

khattori@faculty.chiba-u.jp   +81-43-290-2801

Attention :

・As a general rule, eating and drinking are prohibited at the venue and inside the venue building.

・However, drinks that can be put in a lid, such as plastic bottles or thermoses, are OK.

・Therefore, please note that there will not be a kettle (hot water) provided at the venue.

・Please eat foods at the school cafeteria or other facilities.

Eating is prohibited.
Only plastic bottles with lids or
water bottles are allowed for drinks.

Contents

Program

May 27, 2025 Morning

*The building entrance opens at 8:35.

0835-0900   *Registration*

0900-0910   Opening: Dr. Katsumi Hattori

Chair: Dr. Rui Song

0910-0940   **Shih-Sian Yang** et al., Exploring the existence of pre-seismic atmospheric gravity wave activity before major shallow earthquakes in Japan and Taiwan: 2024-2025

0940-1010   **Yongxin Gao** et al., Simulation of the acoustic gravity waves generated by a seismic source in the solid earth. (*invited*)

1010-1030   **Zhiqiang Mao** et al., Geomagnetic disturbances of 2024 Hualien earthquake

1030-1050   **Donghua Zhang** et al., Study on Seismic Anomaly Extraction of Swarm Satellite Magnetic Field Data Based on Complex Non-negative Matrix Factorization

1050-1110   **Baiyi Yang** et al., Spatiotemporal evolution characteristics of outgoing longwave radiation (OLR) anomalies before the 2021 Ms7.4 Madoi earthquake

1110-1140   **Hong-Jia Chen**, Investigating the Correlation Between Geoelectric Signals and Seismic Activity: Cases from Hualien and Chiayi, Taiwan

1140-1240   *Lunch*

May 27, 2025 Afternoon

Chair: Dr. Peng Han

1240-1300 **Xinle Zhang** et al., Seismicity Analysis In Yunnan Region And Its Application

1300-1320 **Yiqun Zhang**, Incorporating Non-Seismic Precursors into Earthquake Probabilistic Forecasting Model

1320-1340 **Wenchao Li** et al., Incorporating Seismo-Magnetic Precursor Anomalies into ETAS Model for Earthquake Forecasting

1340-1440 Poster session 1

Chair: Dr. Peng Han

1440-1510 **Yuanyuan Zhou**, A Multi-Source Precipitation Fusion Model Based on Broad Learning System: A Case Study of Yunnan Province, China

1510-1540 **John B. Rundle**, Nowcasting Earthquakes with QuakeGPT, an AI-Enhanced Model: Methods, Information Content, First Results, Future Directions (*invited*)

1540-1550 *Break Time*

Chair: Dr. Katsumi Hattori

1550-1620 **Rui Wang** et al., Dual-Parameter Earthquake Forecasting in Yunnan: b-value and Background Seismicity Rate

1620-1650 Yoichi Noda, **Katsumi Hattori** et al., Development of GNSS-based pseudo-strainmeter; preliminary study for the 2016 Kumamoto earthquake (Mj7.3), Japan - temporal and spatial analysis in Kyushu -

1650-1720 **Josaphat Tetuko Sri Sumantyo**, Establishment of an Interdisciplinary Hub for AI Disaster Mitigation and Sustainability (*invited*)

1720-1740 Discussion: Dr. Katsumi Hattori *and Group photo*

1830-2030 *Welcome Party* (The Italian bar ROMERO at Nishi-Chiba Station)

May 28, 2025 Morning

*The building entrance opens at 8:35.

Chair: Dr. Yongxin Gao

0900-0920 **Haruki Ariizumi** et al., Monitoring groundwater flows with using 3D self-potential tomography

0920-0940 **Chinatsu Sasanuma** et al., Statistical significance and Molchan's Error Diagram analyses for long-term Ionosonde data from 1958-2024 at Kokubunji, Japan

0940-1000 **Ting Li** et al., Ionospheric disturbances observed over China after 2022 January 15 Tonga volcano eruption

1000-1030 **Rui Song** et al., The three-dimensional ionospheric electron density disturbances following the 2011 M9.0 Tohoku-Oki earthquake in Japan

1030-1100 **Tiger Jann-Yenq Liu** et al., Lessons learned from ionospheric precursors of the 21 September 1999 M7.7 Chi-Chi Earthquake (*invited*)

1100-1130 **Kosuke Heki** et al., Ionospheric changes immediately before the 2025/3/28 Myanmar Eq. (*invited*)

1130-1210 *Lunch*

1210-1310 Poster session 2

May 28, 2025 Afternoon

Chair: Dr. Toshiyasu Nagao

1310-1340 **Kuniyuki Motojima**, Equivalent sunset time delay on MF radio waves propagation prior to earthquakes

1340-1400 **Nagisa Sone** et al., Fright Model and Mission Concept of the W6U PRELUDE CubeSat for Seismic Ionospheric Disturbance Observation

1400-1420 **Ryoma Miura** et al., Design and Development Status of the Instrument Unit of PRELUDE for Observing Pre-Earthquake Ionospheric Disturbances

1420-1440 **Qiang Zu** et al., Multi-rotor unmanned aerial vehicle aeromagnetic survey system

1440-1510 **Yuji Enomoto**, Towards the Forecast and Prevention of Earthquake-Induced Methane Geohazards: A Survey of the Large-Scale Fire in Wajima City following the 2024 Noto Peninsula Earthquake (*invited*) [*online*]

1510-1540 **Daya Shanker** et al., Identifying Earthquake Precursors in the Western Nepal Himalayas Using Fractal Methods [*online*]

1540-1550 *Break Time*

Chair: Dr. Tiger Jann-Yenq Liu

1550-1620 **Victor A. Novikov**, Seismicity response to strong variations in the geomagnetic field as a manifestation of electromagnetic triggering of earthquakes (*invited*) [*online*]

1620-1650 **Denis Zinkin** et al., Do solar flares and sudden storm commencements trigger earthquakes? [*online*]

1650-1720 **Dimitar Ouzounov** et al., The influence of geospace weather on earthquake processes: Case study for the M7.7 Myanmar earthquake on March 28, 2025. [*online*]

1720-1740 Discussion: Dr. Tiger Jann-Yenq Liu

1740 Closing: Dr. Katsumi Hattori

Posters

P1:   **Hongyan Chen** et al., Seismo-geomagnetic precursor signal recognition based on a novel high-precision interstation transfer function method

P2:   **Shu Kaneko** et al., A development of signal discrimination method using Multi-channel Singular Spectrum Analysis (MSSA) for ULF band electromagnetic data, in Boso, Japan (3)

P3:   **Yuichiro Ota** et al., Development of VLF/LF interferometer using capacitive circular flat-plane antenna and signal discrimination / identification by machine learning: Preliminary Result

P4:   **Kento Enomoto** et al., Statistical Analysis of GIM-TEC Anomalies Associated with large earthquakes (M>7) during 2000-2024

P5:   **Kiyotaka Ninagawa** et al., Continuous radon measurement in atmosphere in Japan

P6:   **Shiori Fukunaga** et al., The Fluctuations of the Soil Radon Fluxes at Two Different Depths at Asahi Station, Japan

P7:   **Katsumi Hattori** et al., Formation of interdisciplinary hub for AI disaster mitigation and sustainability studies

P8:   **Chie Yoshino** et al., Multi-sensor monitoring network for earthquake precursor study near subduction zone at Chiba University, Japan

P9:   **Yoichi Noda** et al., Development of GNSS-based pseudo-strainmeter; preliminary study for the 2016 Kumamoto earthquake (Mj7.3), Japan - temporal and spatial analysis in Kyushu -

P10: **Haruki Ariizumi** et al., Monitoring groundwater flows with using 3D self-potential tomography

P11: **Chinatsu Sasanuma** et al., Statistical significance and Molchan's Error Diagram analyses for long-term Ionosonde data from 1958-2024 at Kokubunji, Japan

P12: **Wenchao Li** et al., Incorporating Seismo-Magnetic Precursor Anomalies into ETAS Model for Earthquake Forecasting

P13: **Shuangshuang Li** et al., Development and testing of long-term high stability solid non-polarized electrode

P14: **Shuangshuang Li** et al., Lithological controls on infiltration and failure characteristics of rainfall-induced landslide: experimental study of slopes in northern Guangdong, China

P15: **Xiaocan Liu** et al., North-South asymmetry of Sq variations at geomagnetically conjugate area

P16: **Kuan-Yu Lee** et al., Responses of Seismo-ionospheric Precursors in the Total Electron Content to Earthquake Magnitude and Depth in Taiwan and Japan during 1999–2024

P17: **Toru Nakagawa**, Earthquake Prediction Research Based on the TRIZ Philosophy: (7) Vision of Our Goal - Official Operation of EQ Prediction Notices/Warnings

Presentation information:

Oral presentation: 30 or 20 minutes including 5 minutes question-and-answer time.

Poster presentation: Poster board size: 90(W) x 180(H) cm
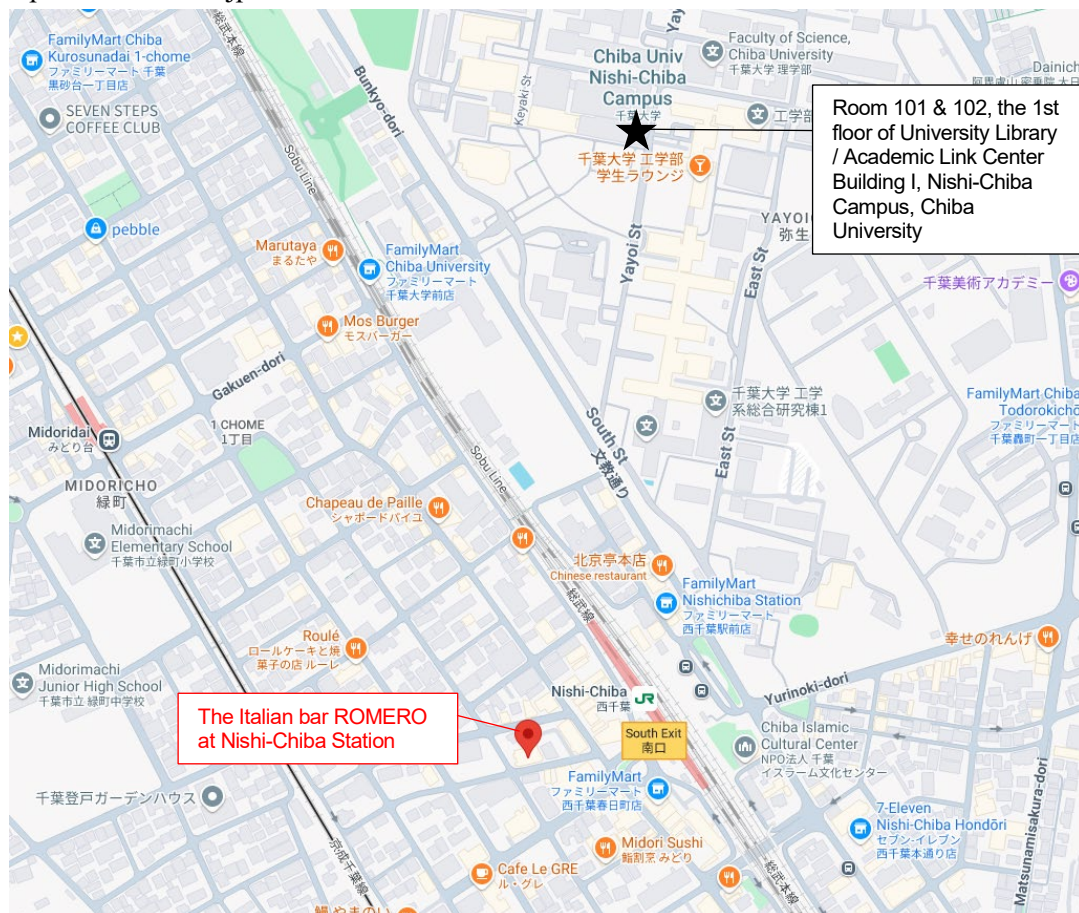
All the posters will be shown in the conference room during May 27 and 28.

Welcome Party:

Welcome party will be held from 18:30 on May 27, 2025 at " The Italian bar ROMERO at Nishi-Chiba Station ", near JR Nishi-Chiba station (5 minutes by walk). The price will be 8,000 JPY per person (3,000 JPY for a student).

" The Italian bar ROMERO at Nishi-Chiba Station "
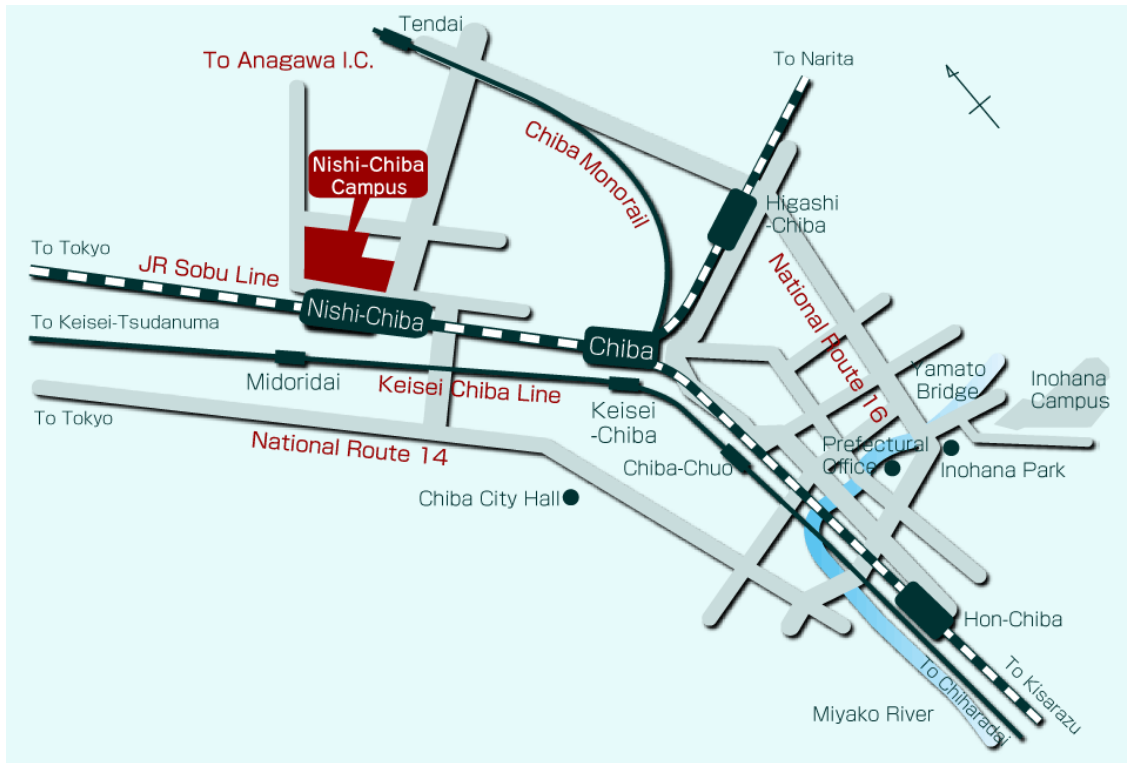
https://romero.owst.jp/en/

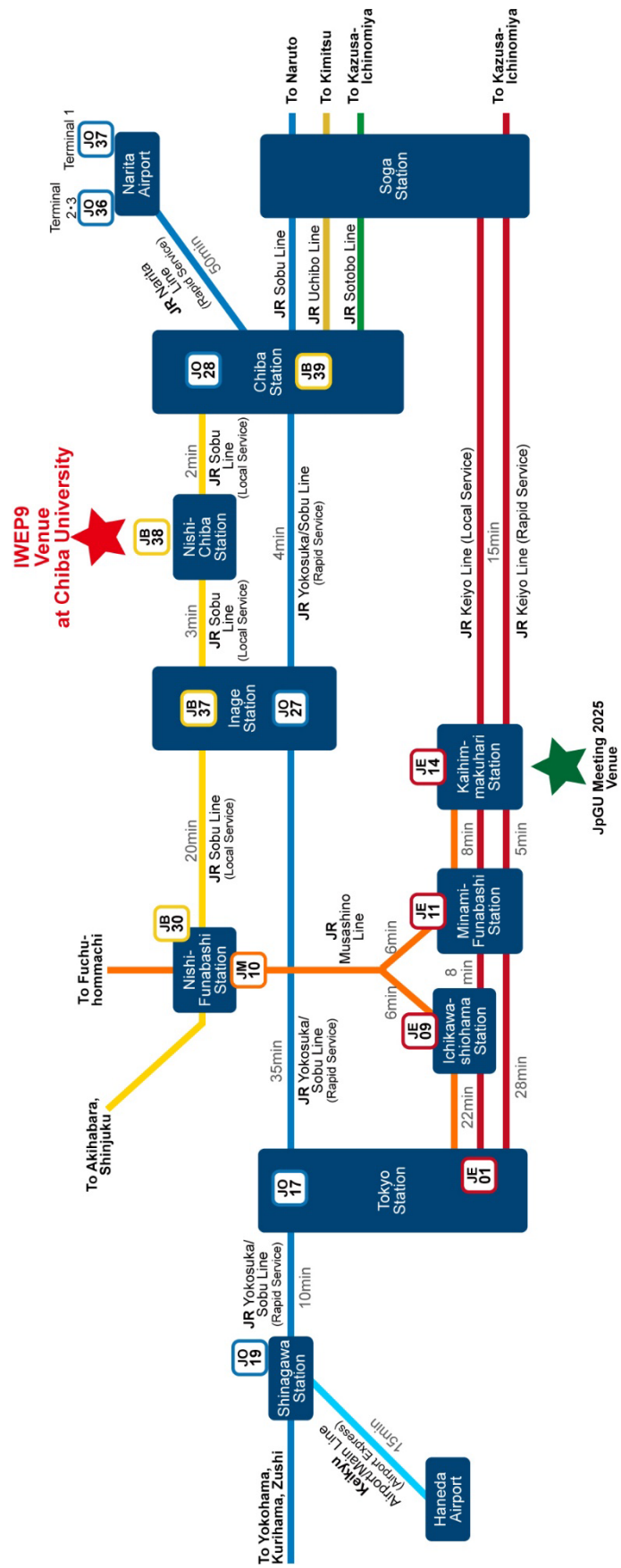# Access to Nishi-Chiba Campus, Chiba University:

2-min walk from JR Nishi-Chiba Station to the South Gate of Nishi-Chiba Campus

7-min walk from Keisei Midoridai Station to the Center Gate of Nishi-Chiba Campus

10-min walk from Chiba Monorail Tendai Station to the North Gate

JR Tokyo	35min / 8 Stations	JR Inage	3min / 1 Station	JR Nishi-Chiba
	JR Sobu Line (Rapid Service)		Sobu Line (Local Service)	

Keisei Ueno	35min / 6 Stations	Keisei Tsudanuma	11min / 5 Stations	Keisei Midoridai
	Keisei Line, Limited Express		Keisei Chiba Line	

Haneda Airport	16 min / 1 Station	JR Shinagawa	45 min / 10 Stations	JR Inage	3 min / 1 Station	JR Nishi-Chiba
	Keihin Kyuko Line Airport Rapid Limited Express		JR Sobu Line (Rapid Service)		Sobu Line (Local Service)	

Haneda Airport	17 min / 1 Station	JR Hama-matsucho	6 min / 3 Stations	JR Tokyo	35 min / 8 Stations	JR Inage	3 min / 1 Station	JR Nishi-Chiba
	Tokyo Monorail Haneda Express		JR Yamanote Line		JR Sobu Line (Rapid)		Sobu Line (Local Service)	

Narita Airport	42 min / 8 Stations	JR Chiba	3 min / 1 Station	JR Nishi-Chiba
	JR Sobu Line (Rapid Service)		Sobu Line (Local Service)	

8

IWEP9 Venue at Chiba University

JpGU Meeting 2025 Venue

To Naruto
To Kimitsu
To Kazusa-Ichinomiya
To Kazusa-Ichinomiya

Soga Station

JR Sobu Line
JR Uchibo Line
JR Sotobo Line

Terminal 1
Terminal 2-3
Narita Airport

JO 37
JO 36

JR Narita Line (Rapid Service) 50min

JO 28
Chiba Station
JB 39

JR Sobu Line (Local Service) 2min

JB 38
Nishi-Chiba Station

JR Sobu Line (Local Service) 4min

JR Yokosuka/Sobu Line (Rapid Service)

JB 37
Inage Station
JO 27

JR Sobu Line (Local Service) 3min

JR Keiyo Line (Local Service) 15min
JR Keiyo Line (Rapid Service)

JE 14
Kaihim-makuhari Station

JR Sobu Line (Local Service) 20min

JB 30
To Fuchu-hommachi

JM 10
Nishi-Funabashi Station

JR Musashino Line

JE 11
Minami-Funabashi Station

8min
5min

JE 09
Ichikawa-shiohama Station

6min
8 min
6min

To Akihabara, Shinjuku

JR Yokosuka/Sobu Line (Rapid Service) 35min

22min
28min

JO 17
Tokyo Station
JE 01

JR Yokosuka/Sobu Line (Rapid Service) 10min

JO 19
Shinagawa Station

To Yokohama, Kurihama, Zushi

Keikyu Main Line (Airport Express) 15min

Haneda Airport

9