

WORKSHOP SCHEDULE

The 7TH ASIA-OCEANIA SPACE WEATHER ALLIANCE WORKSHOP

8-11

OCTOBER 2024

NOVOTEL SUVARNABHUMI HOTEL BANGKOK, THAILAND

AOSWA 2024
Asia-Oceania Space Weather Alliance THAILAND

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Workshop Schedule

Tuesday 08.10.2024 (UTC + 7)

8:00 -9:00	Arrival Registration & Presentation Drop
9:00-9:15	Welcome Remarks: Dr.Takuya Tsugawa Chair of the AOSWA Steering Committee (SOC) and Director of the Space Environment Laboratory at the National Institute of Information and Communications Technology (NICT), Japan
9:15-9:30	Opening Ceremony: Dr.Pakorn Apaphant Executive Director, Geo-Informatics and Space Technology Development Agency (GISTDA)
9:30-10:00	Coffee Break & Group Photo
10:00-10:45	Keynote Speaker I Dr.Mark Cheung , CSIRO, Australia Speech Title: "Solar Drivers of Space Weather"
	Session V: AI and New Techniques of Space Weather Forecasting Convener: Dr.I-Te Lee Co-Convener: Dr.Lin Min Min Myint and Dr.Naoto Nishizuka
10:45-11:00	ID31 What Kinds of Problems in Space Weather are Well Solved by Deep Learning?: Yong-Jae Moon
11:00-11:15	ID32 Solar Limb Flare Predictions Using SDO/AIA EUV Data: Jaewon Lee
11:15-11:30	ID24 F10.7 daily forecast using LSTM combined with VMD method: Jianyong Lu
11:30-11:45	ID92 Enhanced Detection and Tracking of Coronal Mass Ejections (CME) Using Machine Learning Techniques: Wanida Panup
11:45-12:00	ID07 Empirical Model of Equatorial Spread-F Probability under Solar Activity Conditions at Chumphon, Thailand: Phimmasone Thammavongsy
12:00-13:00	LUNCH (Venue : Suvarnabhumi Grand Ballroom C)
	Session V : AI and New Techniques of Space Weather Forecasting (Continue) Convener: Dr. I-Te Lee Co-Convener: Dr.Lin Min Min Myint and Dr.Naoto Nishizuka
13:00-13:15	ID49 Development of Upper Atmospheric Assimilative Model using GAIA: Hidekatsu Jin



Workshop Schedule

Tuesday 08.10.2024 (UTC + 7)

13:15-13:30	Abstract withdrawn
13:30-13:45	ID52 Neural network modeling of geomagnetic baseline for future generation of geomagnetic indices at mid-latitudes with insights from AI interpretability: Rungployphan Kieokaew
13:45-14:00	ID51 The classification of Spread – F using Machine learning with Data from VHF radar and Ionosonde at Chumphon station, Thailand: Thananphat Thanakulketsarat
14:00-14:15	ID53 Prediction of foE using Neural Network over Chumphon, Thailand and its comparison with the IRI model: Sakrapop Khuangsatung
14:15-14:30	ID82 Ionospheric Scintillation Forecasting with Conformal Prediction: Chanya Kongpho
14:30-14:45	ID80 Time Series Forecasting of Ionospheric Amplitude Scintillation in Thailand Using LSTM Networks: Patinya Muangkammuen
14:45-15:00	Coffee Break
Session VIII: Space Weather Impact and Mitigation Covener : Dr.Mamoru Ishii Co-Convener : Dr.Kichang Yoon and Dr.Sittiporn Channumsin	
15:00-15:15	ID50 Impact of Space Weather on Spacecraft Operations: Andrew Monham
15:15-15:30	ID29 Space weather phenomena and social impact: Report from ISES: Mamoru Ishii
15:30-15:45	ID25 Impact of solar activity on precipitable water vapor and climate conditions over Thailand: Punyawi Jamjareegulgarn
15:45-16:00	Abstract withdrawn
16:00-16:15	ID33 Real-Time Kinematic (RTK) Positioning Performances during Equatorial Plasma Bubbles (EPB) events in Thailand: Pornchai Supnithi
16:15-16:30	ID08 Monitoring Ionospheric Irregularities and TEC Variations During High solar activity in 2024: Napat Tongkasem
16:30-16:45	ID78 Enhanced Ionospheric Delay Gradient Estimation Using a Dynamic Time-Step Method with GNSS IGSO Satellites: Jirapoom Budtho



Workshop Schedule

Tuesday 08.10.2024 (UTC + 7)

Session VIII : Space Weather Impact and Mitigation (Continue)

Covener : Dr.Mamoru Ishii |

Co-Convener : Dr.Kichang Yoon and Dr.Sittiporn Channumsin

16:45-17:00

ID38 Assessment of Ionospheric Modelling for Multi-Constellation GBAS
Based in a CORS Network: **Martin Alban**

Session VII : General Topics on Space Weather (Part I)

Covener: Dr.Takuya Tsugawa | **Co-Convener**: Dr.Zahra Bouya

17:00-17:15

ID72 Space Weather Forecast and Social Impacts in Japan in the Event of
Large Solar Flares in May 2024: **Takuya TSUGAWA**

17:15-17:30

ID56 Space weather impacts in China during the May 2024 Events:
Bingxian Luo

17:30-17:45

ID101 The ionospheric response to the May 2024 geomagnetic storm in the
Australian region: **Zahra Bouya**

17:45-18:00

Break (Free time)

18:00-18:30

Registration for Welcome Dinner

18:30-21:00

Welcome Dinner



Workshop Schedule

Wednesday 09.10.2024 (UTC + 7)

8:30-9:15	Keynote Speaker II Prof.Dr.David John Ruffolo , Faculty of Science, Department of Physics, Mahidol University, Thailand Speech Title: "Thai Research on Space Radiation"
	Session II : Monitoring and Simulation of Solar Activity and Space Radiation Convener : Prof.Dr.David Ruffolo Co-Convener: Dr.Naoto Nishizuka
09:15-09:30	ID86 Monitoring and Predictions of Solar Flares and CMEs in NICT: Naoto Nishizuka
09:30-09:45	ID77 Solar Activities Forecast System in Indonesia: Models and Tools: Johan Muhamad
09:45-10:00	ID40 Using Galactic Cosmic Rays from LHAASO Experiment to Monitor the Daily Variation of the Sun-Earth Magnetic Fields: Yuncheng Nan
10:00-10:15	Morning Break
	Session II : Monitoring and Simulation of Solar Activity and Space Radiation (Continue) Convener : Prof.Dr.David Ruffolo Co-Convener: Dr.Naoto Nishizuka
10:15-10:30	ID74 Conceptual Design and Simulation of Moon-Aiming Thai-Chinese Hodoscope for Measurement of Cosmic Ray Electrons and Lunar Albedo Ions: Kunlanan Puprasit
10:30-10:45	ID73 Conceptual Design and Feasibility Study of Polar Orbiting Ion Spectrometer Experiment (POISE) Payload, a Mission of the First Thai Space Consortium Satellite (TSC-1): Kullapha Chaiwongkhot
10:45-11:00	ID68 Analysis of Neutron Monitor Count Rates and Timing Distributions from Latitude Surveys: Panutda Yakum
11:00-11:15	ID71 Analysis of Neutron Monitor Count Rates at Different Altitudes and Similar High Cutoff Rigidity: Sidarat Khamphakdee
11:15-11:30	ID64 Time variations of cosmogenic nuclide Be-7 in the surface atmosphere at Bangkok from 2014: Warit Mitthumsiri



Workshop Schedule

Wednesday 09.10.2024 (UTC + 7)

Session VII : General Topics on Space Weather (Part II)

Covener: Dr.Takuya Tsugawa | **Co-Convener:** Dr.Zahra Bouya

11:30-11:45 ID36 Pattern of Solar Activity levels and their effects on galactic cosmic ray particle fluxes throughout 23rd and 24th solar cycle:

AHMAD YUSOF ABDO JAMAL

11:45-12:00 ID44 Sensitivity of the Galactic Cosmic Ray Anisotropy from Neutron Monitors to the Large Scale Averaged Interplanetary Magnetic Field:

Pierre-Simon Mangeard

12:00-13:00 LUNCH (Venue : Suvarnabhumi Grand Ballroom C)

Session VI : CGMS Efforts to Improve User Access to Operational Space Weather Data

Covener : Dr.Tsutomu Nagatsuma | **Co-Convener :** Mr.Andrew Monham

13:00-13:15 ID100 Aditya-L1: A Solar and Heliospheric Observatory from India:

Mohammad Hasan

13:15-13:30 ID96 Operational framework on Cross-Calibration of Space Weather Sensor:

Tsutomu Nagatsuma

13:30-13:45 ID70 Thailand's Space Weather policy, research and space weather operation:

Acharaporn Bumrungrkit

13:45-14:00 ID95 International Space Weather Data Exchange Through EUMETSAT:

Andrew Monham

14:00-15:00 Panel-discussion

Moderator: Dr.Tsutomu Nagatsuma and Mr.Andrew Monham

15:00-15:15 Coffee Break

Session I : Thermosphere, Ionosphere, and Magnetosphere Dynamics and Interactions (Part I)

Covener: Dr.Zahra Bouya | **Co-Convener:** Prof.Dr.Pornchai Supnithi

15:15-15:30 ID93 Interactions between the thermosphere and the ionosphere following the 2022 Hunga Tonga Volcano eruption and the implications for satellite positioning across the Australian and Southeast Asian regions:

Brett Carter



Workshop Schedule

Wednesday 09.10.2024 (UTC + 7)

Session I : Thermosphere, Ionosphere, and Magnetosphere Dynamics and Interactions (Part I) (Continue)

Covener: Dr.Zahra Bouya | **Co-Convener:** Prof.Dr.Pornchai Supnithi

15:30-15:45

ID66 Magnetospheric Dynamics during Substorms and Pseudosubstorms:
Kanpatom Kasonsuwan

15:45-16:00

ID55 Improving Ionosphere-Thermosphere Data Assimilation through
Physics-Based Dynamic Mode Decomposition: **Timothy Kodikara**

16:00-16:15

ID37 Exploring Geomagnetic Storm Evolution and Ionospheric Disturbance
Dynamo Response Over Solar Cycle 24: **Raja Adibah Raja Halim Shah**

16:15-16:30

ID34 Equatorial plasma bubble observations from FS7/COSMIC2 and
relevant to the Rayleigh-Taylor instability: **Lung-Chih Tsai**

Poster Session

[**Convener** : Dr.Suwicha Wannawichian]

Co-convener : Dr.Prasert Kenpankho]

Session I: Thermosphere, Ionosphere, and Magnetosphere Dynamics and Interactions

16:30-18:00

ID14 Solar Activity Dependence of Equatorial Plasma Bubble Occurrence
and Eastward Drift Velocity in Southeast Asia: **Idahwati Sarudin**

ID27 Total Electron Content (TEC) Anomalies during the Extreme
Geomagnetic Storm in 2024: **Chollada Pansong**

ID28 Comparison of GNSS Signal Delay Times During Geomagnetic Storms
at Low Latitude in Thailand: **Prasert Kenphankho**

ID42 The Relationship between Geomagnetic Field and Total Electron
Content Variation at Low latitude over Chumphon, Thailand:

Wishapol Sittichai

ID45 GNSS Ionospheric Water Vapor Observation over Thailand:

Supawit Nambut

ID47 Observation of dynamical characteristics of sporadic E during
nighttime in summer by HF Doppler sounding system: **Ryunosuke Saito**

ID48 GNSS Atmosphere Precipitable Water Vapor in Thailand:

Supawit Nambut

ID57 Observation Towards the Behavior of Equatorial Plasma Bubble (EPB)
During Quiet Days in Southeast Asia: **Nur Alia Natasha Johari**

ID84 GNSS Low-cost Robot Accuracy Based on TEC Fluctuation:

Patiphan Sumniang



Workshop Schedule

Wednesday 09.10.2024 (UTC + 7)

Poster Session

[Convener : Dr.Suwicha Wannawichian]

Co-convener : Dr.Prasert Kenpankho]

Session I: Thermosphere, Ionosphere, and Magnetosphere Dynamics and Interactions (Continue)

ID59 Investigating the development of Equatorial Plasma Bubbles (EPBs) through Satellite traces (STs) using ionosonde observations and its implication for prediction: **Gayathri B**

ID81 Study of Ion Species in the Ionosphere over Kathmandu, Nepal during different Geomagnetic Signatures: **Suman Dhakal**

ID99 In-Depth Analysis and Categorization of Geomagnetic Storms Throughout Solar Cycle 24: **Nurul Shazana Abdul Hamid**

Session II : Monitoring and Simulation of Solar Activity and Space Radiation

ID61 The correlation of cosmic ray variations with solar and interplanetary parameters: **Kledsai Poopakun**

ID90 Directional Distribution of Solar Energetic Particles During the 70th Ground Level Enhancement from Polar Neutron Monitor Data: **Alejandro Sáiz**

Session III : Connecting the Local Observation to Global Network and space weather services

ID91 Ionospheric observations during quiet and disturbed days in Solar Cycle 25 using two co-located instruments in Manila: **Lalaine Anne Asares**

Session V : AI and New Techniques of Space Weather Forecasting

ID18 Enhancing Space Weather Forecasting through an Advanced Deep Learning-Based Artificial Intelligence Framework: **Mishak Rahul**

ID35 Identification of Equatorial Ionospheric Irregularities using Clustering Techniques on ROTI Keogram Images: **Gleb Mutasov**

ID63 Performance of Assimilated Ionosphere - thermosphere Coupled Model During Disturbed Conditions: **I-TE LEE**

ID88 Enhanced Prediction of Thermospheric Density During Moderate Geomagnetic Storms Using the Inverted Transformers Model:

Patapong Panpiboon

16:30-18:00



Workshop Schedule

Wednesday 09.10.2024 (UTC + 7)

Poster Session

[Convener : Dr.Suwicha Wannawichian]

Co-convener : Dr.Prasert Kenpankho]

Session VII : General Topics on Space Weather

ID06 Contribution of solar wind parameters to the ionospheric activity variation in the African equatorial zone: **Jocelyn Franck-Patient**

BOUNGOU POATY

ID10 Earthquake Precursor Identification from Simultaneous Geomagnetic and Ionospheric Data Variations: **Nur Fatin Irdina Zulhamidi**

ID17 Kinetic simulations comparing quasi-parallel and quasi-perpendicular piston-driven collisionless shock dynamics in magnetized laboratory plasmas: **Peera Pongkitiwanchakul**

ID22 Prediction Error Analysis of BiLSTM-Based Geomagnetic Field Model for Prospective Earthquake Forecasting: **Muhammad Nur Syaiful Afrizal**

ID97 Operational Insights of the MAGDAS Geomagnetic Measuring Station in Sri Lanka and Analysis of Geomagnetic Responses to High-Speed Solar Wind: **Manjula Ranasinghe**

Session VIII : Space Weather Impact and Mitigation

ID03 Effect of earthquake at low mid and high latitude: **Afsheen Ameer**

Other Session

RIFFAI - Remote Information Future Forecast Artificial Intelligence
by Puthiphat Jirawatanaphalin and Jedsadaporn Pannok

16:30-18:00

18:00-19:00

Business Meeting



Workshop Schedule

Thursday 10.10.2024 (UTC + 7)

8:30-9:15	Keynote Speaker III Dr.Nat Gopalswamy , NASA Goddard Space Flight Center, Greenbelt, MD 20771, USA Speech Title: "ISWI Contribution to Space Weather Research in Developing Countries"
	Session IV : Space Weather Awareness and Public Outreach Convener: Prof.Ir.Dr.Mardina Abdullah Co-Convener: Dr.Waraporn Nuntiyakul and Dr.Bingxian Luo
09:15-09:30	ID09 Enhancing STEM Education through Space Weather Translational Research: Mardina Abdullah
09:30-09:45	ID41 A Potential New Method to Detect Equatorial Plasma Bubble Using Low-Cost SID Detector: Preliminary Results: Darren J.L. Ang
09:45-10:00	ID43 Governing Solar Radiation Management: Implications for Space Weather Monitoring and Mitigation: Yvette Ramos
10:00-10:15	Morning Break
	Session IV : Space Weather Awareness and Public Outreach (Continue) Convener: Prof.Ir.Dr.Mardina Abdullah Co-Convener: Dr.Waraporn Nuntiyakul and Dr.Bingxian Luo
10:15-10:30	ID65 Space Weather War Room: Advancing Research and Education: Tatphicha Promfu
10:30-10:45	ID67 Preliminary Study on Portable Muon Detector Calibration with Ship- borne Neutron Monitor: Aiya Suttikulbutr, Pitchaya Krajangvittaya, and Peepat Phothaworn
10:45-11:00	ID87 Accuracy of low-cost GNSS robot on low and high solar flare days: Patiphan Sumniang
11:00-11:15	ID98 Empowering The Youth in Satellite Development: Damrongrit Khanthong
	Session III : Connecting the Local Observation to Global Network and space weather services Convener : Dr.Septi Perwitasari Co-Convener: Assoc.Prof.Dr.Nurul Shazana Abdul Hamid
11:15-11:30	ID11 Fostering Asia-Oceania Countries in Developing Space Weather's Research Capabilities through AOSWA: Septi Perwitasari



Workshop Schedule

Thursday 10.10.2024 (UTC + 7)

Session III : Connecting the Local Observation to Global Network and space weather services (Continue)

Convener : Dr.Septi Perwitasari |

Co-Convener: Assoc.Prof.Dr.Nurul Shazana Abdul Hamid

11:30-11:45 **ID19** Seasonal Characteristics of Ionospheric Plasma Densities in 2021 at Vientiane Station, Laos: **Phimmasone Thammavongsy**

11:45-12:00 **ID20** Continuous GNSS network and some study results on time variation of the Equatorial Ionization Anomaly in the Vietnam and adjacent region: **Minh Le Huy**

12:00-13:00 **LUNCH (Venue : Suvarnabhumi Grand Ballroom C)**

Session III : Connecting the Local Observation to Global Network and space weather services (Continue)

Convener : Dr.Septi Perwitasari |

Co-Convener: Assoc.Prof.Dr.Nurul Shazana Abdul Hamid

13:00-13:15 **ID102** Space Research and Development Activities in Cambodia: **Cheab Sovuthy**

13:15-13:30 **ID26** The Lithosphere-Atmosphere-Ionosphere Coupling Model in the Geomagnetic Equatorial Ionosphere: **Roland Emerito Otadoy**

13:30-13:45 **ID62** Utilization of Multi-diagnostic Ground-based Observations in the Asia-Oceania Region for the Studies of Equatorial Plasma Bubbles and Traveling Ionospheric Disturbances: **Rezy Pradipta**

13:45-14:00 **ID21** GNSS Receiver Bias Model for Near Real Time TEC Monitoring at Low Latitude, Thailand: **Prasert Kenpankho**

14:00-14:15 **ID58** Exploring the Local Geomagnetic Variations in Taiwan started from 1965: **Huei-Wen Siao**

Session VII : General Topics on Space Weather (Part III)

Convener : Dr.Takuya Tsugawa | **Co-Convener:** Dr.Zahra Bouya

14:15-14:30 **ID75** Large Scale Wave Structures (LSWSs) Prior to the Onset of Equatorial Plasma Bubbles (EPBs) in Malaysia: **Suhaila Binti M Buhari**

14:30-14:45 **ID13** Equatorial Plasma Density Irregularities Observed by Advanced Ionospheric Probe Onboard FORMOSAT-5 Satellite: **Chi-Kuang Chao**



Workshop Schedule

Thursday 10.10.2024 (UTC + 7)

Session VII : General Topics on Space Weather (Part III)

Convener : Dr.Takuya Tsugawa | **Co-Convener**: Dr.Zahra Bouya

14:45-15:00

ID12 Space Weather Research in UKM: Insights from Total Electron Content Studies: **Siti Aminah Bahari**

15:00-15:15

Coffee Break

Session I : Thermosphere, Ionosphere, and Magnetosphere Dynamics and Interactions (Part II)

Covener : Dr.Zahra Bouya | **Co-Convener** : Prof.Dr.Pornchai Supnithi

15:15-15:30

ID94 Statistical Study of Medium-Scale Traveling Ionospheric Disturbances over South Africa Based on GNSS Observations: **Yuichi Otsuka**

15:30-15:45

ID46 Feasibility of observing equatorial plasma bubble using aeronautical navigation radio waves at VHF frequencies: **Keisuke Hosokawa**

15:45-16:00

ID15 Total Electron Content Fluctuations and Their Implications for Global Navigation Satellite Systems; Insights from the Low Latitudes above Thailand in Increasing Phase of Solar 25th Cycle: **Thanapon Keokhumcheng**

16:00-16:15

ID60 Visible and FUV Auroral Onset Locations and Maximum Extents in Substorm Events: **Suwicha Wannawichian**

16:15-16:30

ID85 O/N2 Ratio and VTEC Variations: Models vs. Observations during the 2015 St. Patrick's Day Geomagnetic Storm in American and Asian Sectors: **Paparin Jamlongkul**

16:30-16:45

Abstract withdrawn

16:45-17:00

ID16 Variations in meridional thermospheric winds over Southeast Asia during the inclination phase: **Siti Syazwani Nasuha**

17:00-17:15

ID83 Effects of Geomagnetic Storms on Equatorial Ionization Anomaly and Equatorial Ionospheric Plasma in Thailand: **LIN MIN MIN MYINT**

17:30-17:45

Discussions

17:45-18:00

Closing Ceremony



Friday 11.10.2024 (UTC + 7)

Morning

Space Krenovation Park (SKP)

Geo-Informatics and Space Technology
Development Agency (GISTDA)

Chonburi

The Space Krenovation Park (SKP) is a science park under GISTDA dedicated to advancing space technology research and development, along with the geo-informatics sector in Thailand. Situated in Si Racha, Chonburi Province, it supports small, medium, and large enterprises by promoting innovation and facilitating the commercialization of research. By providing research facilities for private companies and boosting competitiveness through cutting-edge space technology, SKP contributes to regional economic growth and the country's sustainable development.



Friday 11.10.2024 (UTC + 7)

Afternoon

Ta-Kien-Tia Community

Chonburi

The people of Takhian Tia have been living under the shade of the area's coconut trees for over a century. Not only do they plant and harvest the trees, but they have also created a new and diverse mix of cultures through their cuisine, healthcare, crafts and everyday artifacts. Here, you can get a taster of everyday life as you enjoy various coconut delicacies, such as coconut coffee – a special mix of coffee and creamy coconut milk, as well as the famous stir-fried coconut shell with chicken dish. Unwind and let go of all your stress with a coconut oil spa session; practice your creativity with coconut shell tie-dyeing; and travel back in time by exploring the cultural heritage at Ban Roi Sao (the Houses of a Hundred Pillars). You can enjoy all of this on your fascinating, insightful journey along the coconut trail laid by the people of Ta Kien Tia.



photo : [1] <https://welovetogo.com/ban-takhian-tia-community-chon-buri> [2] Ta Kien Tia Community Page



Meeting & Conference Floor Plan

Venue: Novotel Bangkok Suvarnabhumi Airport

Floor: 1st floor

Room: Suvarnabhumi Grand Ballroom

