

2017 International Conference on Space Science and Communication

PROGRAM BOOK



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Conference Background

Space science and technology has grown rapidly and has gained tremendous importance in the sustainable development of natural resources, telecommunications, meteorology and related fields, and an increase in participants in this field since the last four conferences: the 2009 International Conference on Space Science & Communication (IconSpace2009), IconSpace2011, IconSpace2013, and IconSpace2015, the Space Science Centre (ANGKASA), Institute of Climate Change of Universiti Kebangsaan Malaysia (The National University of Malaysia, UKM) is proud to extend her promotion of research and education in the field of space science, technology and governance by this international conference. The 2017 International Conference on Space Science & Communication (IconSpace2017) with a theme "Space Science for Sustainability" will be the fifth in the series of conferences organized by ANGKASA UKM. IconSpace2017 aims to address advances in research on space science and communication by bringing together researchers in the fields of space science, communication technology, and related fields internationally toward sustainable development. The issue of Space Science for Sustainability will be primarily devoted to space science studies and contain the papers presented at this particular meeting. To document research findings and ideas, we are very pleased to inform that the accepted papers of IconSpace2017 will be published to one of the following category.

1. Journal of Physics: Conference series (JPCS) to be published in Institute of Physics (IOP) Conference Series (Online ISSN: 1742-6596).

2. Book Chapter by Springer Nature.

3. A special issue on "Space Science for Sustainability" by Journal of Atmospheric and Solar-Terrestrial Physics (JASTP).



2017 International Conference on Space Science and Communication (IconSpace2017) took place May 3-5, 2017 in Kuala Lumpur, Malaysia.

The proceedings were edited by Wayan Suparta, Mahamod Ismail, Mardina Abdullah, Siti Aminah Bahari, and Noridawaty Mat Daud

Welcome Messages

FOREWORD BY GENERAL CHAIR



Assalamualaikum warahmatullahi wabarakatuh, Peace be Upon You. Alhamdulillah, all praise be to Allah, the Most High for his Grace in facilitating the organization of this conference and giving us the ability to make this conference a success.

Dear Distinguished Guests and Conference Participants,

On behalf of the Space Science Centre (ANGKASA), Institute of Climate Change, Universiti Kebangsaan Malaysia (UKM), and conference committee members, we cordially welcome you to the 2017 International Conference on Space Science and Communication (IconSpace2017). We are very pleased with the positive response to our invitation from various local and international research institutions as well as institutions of higher learning. The enthusiasm showed by increasing numbers of participations locally and abroad, gives us the confirmation,

that what we started eight years ago with IconSpace2009 is a big move in the right direction.

Still with the spirit of IconSpace2015, IconSpace2017 with a theme "Space Science for Sustainability" continues with the intention of bringing together space scientists and engineers from all over the world to present and discuss their research findings. In line with UKM motto, "Inspiring Futures, Nurturing Possibilities" we hope this will create opportunities for more research collaborations and networking for an immerging research. Not to forget together we support frontier research for mankind with UKM spirit of "Guardian of the Nation".

We wish to express our deepest gratitude and appreciation to the Universiti Kebangsaan Malaysia's management and staff for their support and the conference committee members for their relentless effort to ensure the smooth organization of this conference. Our deepest appreciation also goes to the International Advisory Committee, reviewers and sponsors from all over the world for their support towards this conference. Finally, we wish you a fruitful conference and thank you for your participation.

PROF. IR. DR. MARDINA ABDULLAH

General Chair 2017 International Conference on Space Science and Communication

FOREWORD BY TECHNICAL PROGRAM CHAIR



Dear Colleague,

Welcome to the 2017 International Conference on Space Science and Communication (IconSpace2017) in the fifth series of conferences organized by the Space Science Centre (ANGKASA), Institute of Climate Change, Universiti Kebangsaan Malaysia. The four previous IconSpace Series was highly successful in bringing researchers, disseminating ideas and fostering communication and collaboration.

The fifth series of conferences with a theme "Space Science for Sustainability" continues our community efforts to advance research in space science and communication and related fields internationally to present and discuss their research findings as well as creating opportunities

for more research collaborations. Apart from the main conference, there will be a special talk on "Space Exploration & Updates" on 5 May 2017.

The technical program of this conference includes four keynote speakers, invited speakers, and the presentation of papers and poster. The track of the session includes Astrophysics and Astronomy, Atmospheric and Magnetospheric Sciences, Geoscience and Remote Sensing, Satellite and Communication Technology, and Interdisciplinary Space Science. The papers for this conference were selected after a rigorous review process. We have received an overwhelming response with a total of 108 papers with a competitive acceptance rate. The papers were all evaluated by international and local reviewers and at least two reviewers were required to evaluate each paper. The accepted paper of IconSpace2017 will be published in one of the categories: Journal of Physics: Conference series (JPCS) by

Institute of Physics (IOP) Publisher, Book Chapter by Springer Nature, and extended abstract for possible publication in a special issue on "Space Science for Sustainability" by Journal of Atmospheric and Solar-Terrestrial Physics (JASTP).

We should like to offer our thanks for the professionalism of the organizing committee, authors, reviewers, and volunteers deserve much credit for all the time for the successful run of the conference. The editing of the paper for final publication was also a team effort. Without their relentless efforts, this conference would not be possible. We also wish to express our appreciation to all the authors whose papers and presentations make the event a very exciting forum to add values to learn, discussion and exchanges of ideas, and to meet old or new people from different countries and interact with them.

ASSOC. PROF. DR. WAYAN SUPARTA

Chair of Technical Program Committee (TPC) 2017 International Conference on Space Science and Communication



2017 International Conference on Space Science and Communication (IconSpace2017) took place May 3-5, 2017 in Kuala Lumpur, Malaysia.

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Program

Time	Pacific Ballroom	Bunga Kenanga	Bunga Melor	Bunga Tanjung
Wednesda	ay, May 3			
07:30 am-08:30 am	Participant Registration			
08:30 am-09:00 am	Welcoming Remarks			
09:00 am-09:45 am	KS-1: Keynote 1: Ionospheric Space Weather Probed by GNSS Radio Occultation Soundings			
09:45 am-10:00 am		Tea Break		
10:00 am-12:30 pm		S1.1: Astronomy and Astrophysics	S1.2: Geoscience and Remote Sensing I	S1.3: Atmospheric and Magnetospheric Sciences I
01:00 pm-02:00 pm		Lunch		
02:00 pm-02:45 pm	KS-2: Keynote 2 : IUGONET Activities for Upper Atmospheric Research			
02:45 pm-03:00 pm		Tea Break		
03:00 pm-05:00 pm		S2.1: Satellite and Communication Technology I	S2.2: Geosciences and Remote Sensing II	S2.3: Atmospheric and Magnetospheric Sciences II
Thursday	. May 4			
09:00 am-09:45 am	KS-3: Keynote 3 : The Australian Bureau of Meteorology Activities for the Regional Ionospheric Modelling			
09:45 am-10:00 am		Tea Break		
10:00 am-10:30 am			Poster Session	
10:30 am-12:30 pm		S3.1: Interdisciplinary Space Science	S3.2: Geosciences and Remote Sensing III	S3.3: Atmospheric and Magnetospheric Sciences III
01:00 pm-02:00 pm		Lunch		
02:00 pm-02:45 pm	KS-4: Keynote 4 : Remote Sensing Applications in Monitoring Forest Fires			
02:45 pm-05:00 pm		S4.1: Atmospheric and Magnetospheric Sciences IV	S4.2: Geosciences and Remote Sensing IV	S4.3: Atmospheric and Magnetospheric Sciences V

05:00 pm-05:30 pm	Tea Break
05:30 pm-06:00 pm	Announcement for Publication & Awards Presentation
06:00 pm-06:30 pm	End of Conference
Friday, Ma	ay 5
09:30 am-12:30 pm	Special Talks at National Planetarium

Wednesday, May 3

Wednesday, May 3, 07:30 - 08:30

Participant Registration

Room: Pacific Ballroom

Wednesday, May 3, 08:30 - 09:00

Welcoming Remarks

Professor Dato' Dr. Sharifah Mastura Syed Abdullah, Director of IPI

Room: Pacific Ballroom

Wednesday, May 3, 09:00 - 09:45

KS-1: Keynote 1: Ionospheric Space Weather Probed by GNSS Radio **Occultation Soundings**

Professor Liu, Jann-Yeng (Tiger), National Central University, Taiwan

Room: Pacific Ballroom Chair: Teh Wai Leong

Abstract:

The FORMOSAT-3 Project is also named Constellation Observing System for Meteorology, Ionosphere and Climate, or FORMOSAT-3/ COSMIC (F3/C) for short. The project is targeted to place six micro-satellites into six different orbits with 72-deg inclination at 700~800 kilometer above the earth ground. These satellites orbit around the earth to form a low-earth-orbit constellation that conduct radio occultation (RO) by receiving signals transmitted by the 24 US GPS satellites. The satellite observation covers the entire global atmosphere (temperature and water vapor pressure profiles) and ionosphere, providing over 2,500 global RO sounding data (electron density and S4 scintillation profiles) per day since 15 April 2006. This for the first time allows scientists observing the 3D ionospheric electron density structure and dynamics. Ionospheric weathers response to solar wind, solar eclipse, magnetic storm, earthquake/tsunami, etc. are presented. Following the F3/C, FORMOSAT-7/COSMIC (F7/C2) consists of six small-satellites with 24-deg inclination and about 500 km altitude and six small-satellites with 72-deg inclination and about 800 km altitude will be launched in 2018 and 2020, respectively. Currently, NCU (National Central University) has been collaborating with NCAR (National Center for Atmospheric Research) and NOAA to develop ionospheric weather models by assimilating F3/C data into existing ionospheric models. The developed models with F3/C and F7/C2 data shall be open to the space weather and its related communities in the near future.

Biodata:

LIU, Jann-Yenq (Tiger) is a chair professor at National Central University, Taiwan. His research specialty is ionospheric pulsation, ionospheric radio, GPS geoscience applications, ionospheric modeling, and lithosphere-atmosphere-ionospheric coupling. He is the member of AGU, EGU, AOGS, CGU, and JpGU. Prof. Liu received BS, Atmospheric Physics Department, National Central University, TAIWAN in 1980, as well as MS and PhD, Physics Department, Utah State University, USA in 1988 and 1990, respectively. He was Associated Professor at Institute of Space Science, as well as Center for Space and Remote Sensing Research, National Central University, TAIWAN during 1990-1997, and has been Professor since 1997. He also served as Chief Scientist of National Space Organization (NSPO) in Taiwan during 2011-2015. His research areas are in ionospheric space weather (solar flare, solar eclipse, and magnetic storm signatures), ionospheric data assimilation, ionospheric radar science, space- and ground-based GPS geosciences applications (ionospheric total electron content, TEC), seismo-traveling ionospheric disturbance (ionospheric tsunami signature), and seismo-ionospheric precursors. He has been publishing more than 250 referred journal papers since 1988.

Wednesday, May 3, 09:45 - 10:00

Wednesday, May 3, 10:00 - 12:30

S1.1: Astronomy and Astrophysics

Room: Bunga Kenanga Chair: Zamri Zainal Abidin

Limiting Magnitudes and Night Sky Brightness at the Langkawi National Observatory Based on **Observations of Standard Stars**

Chow-Choong Ngeow and Shih-Chang Luo

Surface charging of a crater near lunar terminator Abul Khair Anuar

Comparison of relative sunspot numbers measured in Malaysia with International Sunspot Number calculated by SIDC-SILSO

Norzafirah Rasmani, Nurul Shazana Abdul Hamid, Farahana Kamarudin, Wan Aimran and Idahwati Sarudin

Limb flare measurement from Langkawi National Observatory on 5th January 2016 Farahana Kamarudin, Mohammad Redzuan Tahar and Nor Rafidah Saibaka

Low Cost Solar Flare Detector for Space and Earth's Electromagnetism Observation Nur Zakaria, Mohamad Huzaimy Jusoh and Afifah Taat

Unveiling the Hidden Supermassive Black Hole in NGC 1448 with NuSTAR Adlyka Annuar

Solar Eruptions Initiated in Sigmoidal Active Regions Antonia Savcheva

S1.2: Geoscience and Remote Sensing I

Room: Bunga Melor

Chair: Khairul Nizam Abdul Maulud

Application of 2D electrical resistivity imaging and cone penetration test to assess the hazardous effect of near surface water on foundations in Lagos Nigeria Olusegun Adewoyin, Emmanuel Joshua and M Akinyemi

Measurements of radioactivity levels in part of Ota Southwestern Nigeria: Implications for radiological hazards indices and excess lifetime cancer-risks

Kehinde David Oyeyemi, Mojisola Usikalu, Ahzegbobor Aizebeokhai, Justina Achuka and Jonathan Oluranti

Dependence of Skin Depth on Ultra-Low Frequency (ULF) Wave and Underground Conductivity in the Lithosphere

Khairunnisa Nabilah Juhari, Mohamad Huzaimy Jusoh, Farah Adilah Mohd. Kasran, Siti Nurbaiti Ibrahim and Mohamad Fahmi Hussin

Coastal vulnerability assessment of Pahang coast due to sea level rise: a preliminary study Fazly Amri Mohd, Khairul Nizam Abdul Maulud, Othman Karim and Rawshan Begum

Simulation of three dimensional spectral solar irradiance on digital elevation model Eng Choon Yeap and Lim San

Subsurface structural pattern distributions of the magnetic anomalies in part of the Nigerian South-western Precambrian Basement Complex

John Kayode, Nawawi Mohd and Khiruddin Abdullah

A measurement campaign of air pollution at the street level in Kuala Lumpur City: an integrated approach to find the key hotspots areas

Md Firoz Khan, Mohd Talib Latif, Mazrura Sahani, Shahrul Nadzir and Norhayati Mohd Tahir

S1.3: Atmospheric and Magnetospheric Sciences I

Room: Bunga Tanjung Chair: Teh Wai Leong

A short review on the lower troposphere ozone and visibility impairment Moses Emetere and Marvel Akinyemi

Year to year variation of rainfall rate and rainfall regime in Ota, Southwest Nigeria for the year 2012 to 2015

Temidayo Omotosho, Oluwafumilayo Ometan, Sayo A Akinwumi, Mustapha Adewusi, Adenike Boyo and Mandeep Singh

An analysis of heat wave trends using heat index in East Malaysia Ahmad Norazhar Mohd Yatim and Wayan Suparta

Atmospheric configurations of aerosols loading and retention over Bolgatanga-Ghana Moses Emetere, Samuel Sanni and Patience Tunji-Olayeni

Longitudinal Variation of EEJ Current during Different Phases of Solar Cycle Wan nur izzaty Ismail, Nurul Shazana Abdul Hamid, Mardina Abdullah, Akimasa Yoshikawa and Teiji Uozumi

GPS phase fluctuations over Tromsø and Ny-Ålesund in the low solar activity period Wei-Sheng Chen, Chien-Chih Lee, Fang-Dar Chu and Teh Wai Leong

Wednesday, May 3, 13:00 - 14:00

Wednesday, May 3, 14:00 - 14:45

KS-2: Keynote 2 : IUGONET Activities for Upper Atmospheric Research

Assoc Professor Dr. Yoshimasa Tanaka, National Institute of Polar Research (NIPR), Japan

Room: Pacific Ballroom Chair: Wayan Suparta

Abstract:

Inter-university Upper atmosphere Global Observation NETwork (IUGONET) is a Japanese inter-university project, which provides research infrastructure for sharing ground-based observational data of upper atmosphere. We present the activities made by IUGONET for upper atmospheric research. The upper atmospheric science is characterized by the following properties: (1) Both vertical coupling between multiple spheres and global horizontal circulation are essential. (2) There are a variety of data sets obtained by many kinds of instruments. (3) It is important to monitor the long-term trend. In order to study phenomena in the upper atmosphere, therefore, it is necessary to analyze various data. However, it is often difficult to search and access the data, because database has been built and maintained individually by each university or institute. In addition, there are a variety of data sets, resulting in many types of file formats, so collection and analysis of the data are time-consuming. To overcome these issues, we have mainly developed two tools; one is a metadata database for cross-searching various kinds of the upper atmospheric data distributed across the IUGONET members, and the other is an analysis software for visualizing and analyzing these data in an integrated fashion. We adopted Space Physics Archive Search and Extract (SPASE) metadata model as a basis of the IUGONET metadata format. We have already registered more than 10 million metadata to our metadata database. Our analysis software is based on Space Physics Environment Data Analysis Software (SPEDAS), which is a grass-roots data analysis software written in Interactive Data Language (IDL) for the space physics community and supports multiple missions. We have provided a plug-in software for SPEDAS, which enables users to deal with the IUGONET data on SPEDAS. Furthermore, we have held meetings about twice a year to introduce how to use these IUGONET data and tools.

Biodata:

Yoshimasa Tanaka received his Ph.D. in Department of Earth and Planetary Sciences, Graduate School of Science, Kyushu University, Japan in 2000. After that, he worked as a postdoctoral research fellow at Venture Business Laboratory, Kyushu University (from 2002 to 2003), an expert researcher at National Institute of Information and Communications Technology (from 2003 to 2006), a project researcher at Transdisciplinary Research Integration Center, Research Organization of Information and Systems (from 2006 to 2009), and a project assistant professor at National Institute of Polar Research (NIPR), Japan (from 2009 to 2015). He has been a project associate professor at NIPR and at Department of Polar Science, SOKENDAI (The Graduate University for Advanced Studies) since April 2015. His research interest includes the development of metadata database and analysis software of upper atmospheric data as well as the study on magnetosphere - ionosphere coupling processes in the auroral region.

Wednesday, May 3, 14:45 - 15:00

Wednesday, May 3, 15:00 - 17:00

S2.1: Satellite and Communication Technology I

Room: Bunga Kenanga

Chair: Mahamod Ismail

Analysis of non-rainy attenuation on earth-space path in Ota, Southwest Nigeria Temidayo Omotosho, Sayo A Akinwumi, Mojisola Usikalu, Oluwafumilayo Ometan, Mustapha Adewusi and Mardina Abdullah

The Analysis of the Algorithms of the Complex Optimal Estimates Interpolation in Tasks of Satellite Navigation

Oleg V. Chernoyarov, Alexander Perov, Eugenii Boldenkov and Alexander Faulgaber

- Transparent Solar Antenna of 28 GHz Using Transparent Conductive Oxides (TCO) Thin Film Nur Izzati Mohd Ali, Norbahiah Misran, Mohd Fais Mansor and Faizal Jamlos
- Design of a Dual C slot Reflectarray with Enhanced Phase Range Performance Hasan Malik, Muhammad Yusof Ismail and Muhammad Amin
- Microstrip Feed Slotted Ground Antenna Having Parasitic Element for UWB Applications Ali Bostani and Girish Awadhawal

Efficient Pricing Technique for Resource Allocation Problem in Downlink OFDM Cognitive Radio Networks

Omar B. Abdulghafoor, Musbah Shaat, Mahamod Ismail, Rosdiadee Nordin, Tito Yuwono and Omar Alwahedy

- Design and Analysis of Dual U slot Reflectarray Antenna for X band Applications Hasan Malik and Muhammad Yusof Ismail
- Bee-Comb Shape Left Handed Metamaterial for Terahertz Application Md. Mehedi Hasan, Mohammad Rashed Igbal Farugue and Mohammad Tarigul Islam

S2.2: Geosciences and Remote Sensing II

Room: Bunga Melor

Chair: Mohammad Tariqul Islam

Spectral Mineral Mapping for Characterization of Subtle Geothermal Prospects Using ASTER data

Amin Beiranvand Pour and Aliyu Ja'afar Abubakar

Remote Sensing Assessment of Absorbing Aerosol over Peninsular Malaysia from OMI Onboard Aura Satellite

Kok Chooi Tan, Hwee-San Lim and Mohd Zubir MatJafri

Application of ASTER SWIR Bands in Mapping Anomaly Pixels for Antarctic Geological Mapping Amin Beiranvand Pour

Extraction of shoreline changes in selangor coastal area using gis and remote sensing techniques

Siti Norsakinah Selamat, Khairul Nizam Abdul Maulud, Othman Jaafar and Hamizah Ahmad

Distribution of Ozone Concentration In Klang Valley Using GIS Approaches Abdul Aziz Ab Rahman, Asni Sulaiman, Khairul Nizam Abdul Maulud, Muhammad Aqiff Abdul WAhid, Muhammad Afiq Ibrahim, Fatimah Ahamad, Mohd Talib Latif and Nor Diana Abdul Halim

Micro - Ring Resonator with Variety of Gap Width for acid rain sensing application: Preliminary Simulation Study

Budi Mulyanti, Harry Ramza, Roer Eka Pawinanto, Juwairiyyah Abdul Rahman, Mohd Syuhaimi Bin Ab Rahman, Wahyu Sasongko Putro, Lilik Hasanah and Arjuni Pantjawati

S2.3: Atmospheric and Magnetospheric Sciences II

Room: Bunga Tanjung

Chair: Md Firoz Khan

Effect of aerosols loading and retention on surface temperature in the DJF months Moses Emetere

- Response of lightning energy and total electron content with sprites over Antarctic Peninsula Wayan Suparta and Norbayah Yusop
- Derivation of GPS TEC and receiver bias for Langkawi station in Malaysia Teh Wai Leong, Wei-Sheng Chen and Mardina Abdullah
- Performance and Evaluation of Eight Cloud Models on Earth Space Path for a Tropical Station Temidayo Omotosho, Mustapha Adewusi, Akinyemi Lola, Oluwafumilayo Ometan, Sayo A Akinwumi and Williams Ayara
- The occurrence of individual structure of equatorial plasma bubble in Southeast Asian sector Suhaila M Buhari and Mardina Abdullah
- Measurement of Ionosphere over the Western Pacific Ocean for civil aviation Mamoru Ishii, Hidekatsu Jin, Tatsuhiro Yokoyama, Takuya Tsugawa, Michi Nishioka and Takashi Maruyama

Thursday, May 4

Thursday, May 4, 09:00 - 09:45

KS-3: Keynote 3 : The Australian Bureau of Meteorology Activities for the **Regional Ionospheric Modelling**

Dr. Zahra Bouya, Australian Bureau of Meteorology Space Weather Services, Australia

Room: Pacific Ballroom Chair: Mardina Abdullah

Abstract:

The Australian Bureau of Meteorology through its Space Weather Service (SWS) provides ionospheric products and services to a diverse group of customers. Research and development within SWS is focussed both on developing tailored products and services for the key customer groups, and supporting the Australian Space Forecast Centre (ASFC) operations. This paper proposes an approach to regional ionospheric Total Electron Content (TEC) modelling using the Spherical Cap Harmonic Analysis (SCHA) and an Empirical Orthogonal Function (EOF) analysis based data assimilation model to map the ionospheric layer parameter foF2. The SCHA model

is based on longitudinal expansion in Fourier series and fractional Legendre colatitudinal functions over a spherical cap-like region including the Australian continent. In the assimilative model, EOF patterns and observations are assimilated to obtain the observed EOF coefficients used to construct the Australian region foF2 maps. We outline the design of the assimilative model and the chosen parameters.

Biodata:

Zahra is a space weather researcher at the Australian Bureau of Meteorology Space Weather Services. She has previously worked at the Australian Nuclear Science and Technology Organisation. She obtained her PhD in Atmospheric Physics from New South Wales University in 2008. She has been a space weather forecaster at the Australian Space Forecast Centre since 2011. Zahra's research mainly concern the regional Ionospheric specification and forecasting using Global Navigation Satellite System techniques. She is the secretary of the Asia Oceania Geosciences Society Solar Terrestrial section. She collaborates with the Asia Oceania Space Weather Alliance to join international efforts on increasing awareness of space weather and the future directions of space weather forecasting.

Thursday, May 4, 09:45 - 10:00

Thursday, May 4, 10:00 - 10:30

Poster Session

Rooms: Bunga Kenanga, Bunga Melor, Bunga Tanjung Chair: Wayan Suparta

Ionospheric storm monitoring system using GNSS-TEC observations Takuya Tsugawa, Michi Nishioka, Hidekatsu Jin and Mamoru Ishii

Interplanetary Origin of Large, Super and Super Great Geomagnetic Storms Observed during 1996 to 2012

Sham Singh

Thursday, May 4, 10:30 - 12:30

S3.1: Interdisciplinary Space Science

Room: Bunga Kenanga Chair: Sabirin Abdullah

Solar Charged Laboratory Bench Power Supply Williams Ayara, Temidayo Omotosho, Mojisola Usikalu and Mandeep Singh

Effect of simulated microgravity on rice (MR 219) growth and yield using a 2-D clinostat Teoh Chin Chuang, Ong Keat Khim, Nur Athirah, Ummul Abdul Rauf, Norliza Abu Bakar and Dato' Wan Wan Yunus

Parametric Studies of ANFIS families capability for thunderstorm prediction Wayan Suparta and Wahyu Sasongko Putro

Utilization of Vegetation Indices in Classifying Hornet Composition of Nagoya City Muna Maryam, Mazlan Hashim, Tetsuro Hosaka and Shinya Numata

Analysis of Suborbital Flight Operation Using PESTLE Abdul Raof Zahari and Fairuz Romli

Depiction and analysis of a modified H-shaped double negative meta atom for satellite communication

Md. Jubaer Alam, Mohammad Rashed Iqbal Faruque and Mohammad Tariqul Islam

Impacts of ionospheric electric fields on the GPS tropospheric delays during geomagnetic storms in Antarctica Wayan Suparta

S3.2: Geosciences and Remote Sensing III

Room: Bunga Melor

Chair: Khairul Nizam Abdul Maulud

Investigation to determine the vulnerability of reclaimed land to building collapse using near surface seismic refraction method

Olusegun Adewoyin

Estimation of Lidar Ratios during Haze Events in Penang, Malaysia Wei Ying Khor, Mohd Zubir MatJafri and Hwee-San Lim

Alteration Mineral Mapping in Inaccessible Regions Using Target detection Algorithms to ASTER Data

Amin Beiranvand Pour and Yongcheol Park

Mapping Land Slide Occurance Zones Using Remote Sensing and GIS techniques in Kelantan state, Malaysia

Amin Beiranvand Pour

Measurement of Radon Concentration in Selected Houses in Ibadan, Nigeria

Mojisola Usikalu, Victor Olatinwo, Michael Akpochafor, Moses Aweda, Gianrossano Giannini and Vascotto Massimo

The Impact of Fragmented Forest towards Elephant's Habitat Loss in Kota Tinggi District, Johor using Remote Sensing Approach

Noordyana Hassan, Sazlieya Saupi Teri, Nurul Nadiah Yahya and Mazlan Hashim

S3.3: Atmospheric and Magnetospheric Sciences III

Room: Bunga Tanjung

Chair: Mandeep Singh

- Satellite observation analysis of aerosols loading effect over Monrovia-Liberia Moses Emetere
- Ionospheric TEC response to the partial solar eclipse over the Malaysian Region Rohaida Mat Akir, Mardina Abdullah, Kalaivani Chellappan and Siti Aminah Bahari
- Comparison of ionospheric profile parameters with IRI-2012 model over Jicamarca Saeed Abioye Bello, Mardina Abdullah, Nurul Shazana Abdul Hamid and Reinisch Bodo
- Irregularities of ionospheric VTEC during Lightning Activity over Antarctic Peninsula Wayan Suparta and Wan Nur Arina Binti Wan Mohd Nor
- Comparison of measurement and predicted HF operating frequencies during low solar activity Rafidah Abd Malik, Mardina Abdullah, Sabirin Abdullah and Mariyam Jamilah Homam
- Peak Time of Equatorial Electrojet from Different Longitude Sectors during Fall Solar Minimum Nurul Shazana Abdul Hamid, Huixin Liu, Teiji Uozumi, Akimasa Yoshikawa and Norhani Muhammad Nasir Annadurai

Thursday, May 4, 13:00 - 14:00

Thursday, May 4, 14:00 - 14:45

KS-4: Keynote 4 : Remote Sensing Applications in Monitoring Forest Fires

Professor Dr. Mastura Mahmud, Universiti Kebangsaan Malaysia (UKM), Malaysia

Room: Pacific Ballroom

Chair: Shahrul Nadzir

Abstract:

Biomass burning activities is a repeated problem not only in the equatorial Southeast Asia particularly during the burning season but throughout the world. Remote sensing is a technique that can detect and monitor the active fires, smoke plumes and air pollution. The talk will review current and future geostationary satellite sensors and the capabilities for active fire detection and pre- and postfire monitoring applications such as fire risks, surface albedo monitoring, and burned area mapping.

Biodata:

Mastura Mahmud is a Professor at the Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia (UKM). She is currently the Deputy Dean of Research and Innovation at the Faculty. She was previously the Head of the Earth Observation Centre (EOC), which is a centre of excellence at the Faculty, from 2004 to 2012. Mastura's area of specialisation is meteorology and she has written a book on the haze report published by the Department of Environment, Ministry of Natural Resources and Environment in 2007, entitled Report on the Scientific Event Haze Peninsular Malaysia in August 2005: Part I - Major Contributors of Haze Which Hit Malaysia in 2005. She has also written a book on Transboundary Pollution: Tracking through Remote Sensing for her Professorial Inaugural Lecture in 2014. She was also involved as a representative of the Global Observation of Forest Cover Dynamics-Global Land Observation (GOFC-GOLD) Regional Network and was a member of the GOFC-GOLD Fire Network implementation team under the Food and Agriculture Organization (FAO). In addition, she was appointed by the Department of Environment as a member of the expert group on the formation of the ambient air quality standards in 2012 and a member of the working group on the preparation of greenhouse gas inventories for the 3rd Report of the National Communication to the Intergovernmental Panel on Climate Change (IPCC).

Thursday, May 4, 14:45 - 17:00

S4.1: Atmospheric and Magnetospheric Sciences IV

Room: Bunga Kenanga

Chair: Mohammad Rashed Igbal Farugue

Altering rainfall patterns through aerosol dispersion Moses Emetere, Muhammad Bakeko and Williams Ayara

A brief review:response of ionosphere on solar activity Siti Aminah Bahari and Mardina Abdullah

Characterization of lightning energy during 2014-2015 summer and winter over the Antarctic Peninsula

Wayan Suparta and Siti Khalijah Zainudin

Investigation of Zonal Velocity Equatorial Plasma Bubbles (EPBs) by using GPS data Idahwati Sarudin, Nurul Shazana Abdul Hamid, Mardina Abdullah and Suhaila Buhari

Estimation water vapor content using the mixing ratio method and validated with the ANFIS **PWV** model

Wayan Suparta, Kemal Alhasa and Mandeep Singh

S4.2: Geosciences and Remote Sensing IV

Room: Bunga Melor Chair: Shahrul Nadzir

Background Radiation Dose of Dumpsites in Ota and Environs Mojisola Usikalu, Justina Achuka, Williams Ayara, Idowu Babarimisa and Olumuyiwa Ola

Validation of Sea Levels from Coastal Altimetry Waveform Retracking Expert System: A Case Study around the Prince William Sound in Alaska Nurul Hazrina Idris, Xiaoli Deng and Nurul Hawani Idris

Manifestation of SVM-based Rectified Linear Unit (ReLU) Kernel Function in Landslide Modelling

Biswajeet Pradhan and Maher Ibrahim Sameen

The Measurement of Solar Ultraviolet Ambient Dose using EBT3 Film Ahmad Fairuz Omar, Ummi Shuhada Osman and Intan Nadia Mohammad Saleh

Installing the earth station of Ka-band satellite frequency in Malaysia: Conceptual framework for site decision

Mohd. Rizaludin Mahmud

Modelling Airborne Dispersion for Disaster Management Ivin Amri Musliman

S4.3: Atmospheric and Magnetospheric Sciences V

Room: Bunga Tanjung

Chair: Temidayo Omotosho

- Geomagnetic Storms Effect on Fluctuations of Total Electron Content at an Equatorial Station Siti Zainab and Mariyam Jamilah Homam
- Impact of Meteorological Parameters over Covenant University, Ota, Nigeria Olukayode Falayi, Mojisola Usikalu, Temidayo Omotosho, Olurotimi Ojoniyi and Sayo A Akinwumi

Time derivative of horizontal geomagnetic field of low latitude MAGDAS Langkawi station for geomagnetically induced current estimation

Farah Adilah Mohd. Kasran, Mohamad Huzaimy Jusoh, Akimasa Yoshikawa and Zahira Mohd Radzi

- EEJ variation of geomagnetic disturbance during northward interplanetary magnetic field Siti Nurbaiti Ibrahim, Mohamad Huzaimy Jusoh, Ahmad Asari Sulaiman, Farah Adilah Mohd. Kasran, M Abbas, Mardina Abdullah and Akimasa Yoshikawa
- Meteor head and terminal flare echoes observed with the Gadanki MST radar Kammadhanam Chenna Reddy

Aerosols loading statistical dimensions over Serekunda-Gambia Moses Emetere

Thursday, May 4, 17:00 - 17:30

Thursday, May 4, 17:30 - 18:00

Announcement for Publication & Awards Presentation

Rooms: Bunga Kenanga, Bunga Melor, Bunga Tanjung Chair: Wayan Suparta

Thursday, May 4, 18:00 - 18:30

End of Conference

Friday, May 5

Friday, May 5, 09:30 - 12:30

Special Talks at National Planetarium

Chair: Teh Wai Leong

Compilation of Abstracts

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PROCEEDING PUBLISH BY JPCS, IOP

Limiting Magnitudes and Night Sky Brightness at the Langkawi National Observatory Based on **Observations of Standard Stars**

May 3, 2017 10:00

Chow-Choong Ngeow (National Central University, Taiwan); Shih-Chang Luo (National Central University, Taiwan)

Abstract: We present the estimation of limiting magnitudes and night sky brightness at the Langkawi National Observatory with observations of selected standard stars. We first derived the transformation equations using the standard stars in our CCD images, followed by photometric calibration of the 2MASS point sources located in these images. Based on the calibrated magnitudes, we estimated a limiting magnitude of $V = 16.6 \pm 0.1$ mag can be reached with a 60 second exposure time. For the night sky brightness, our measurements give Vsky = 19.0 ± 0.1 mag arc-second-2 at the zenith direction. Our results can be used for planning the night time observations at the Langkawi National Observatory.

Bio: Malaysian citizenship PhD in Astronomy from University of Massachusetts (2005) Postdoc at University of Illinous, Department of Astronomy (2005-2009) Faculty at National Central University, Institution of Astronomy (2009-present)

Application of 2D electrical resistivity imaging and cone penetration test to assess the hazardous effect of near surface water on foundations in Lagos Nigeria

May 3, 2017 10:00

Olusegun Adewoyin (Covenant University & College of Science and Technology, Nigeria); Emmanuel Joshua (University of Ibadan, Nigeria); M Akinyemi (Covenant University, Nigeria)

Abstract: Adequate information on the condition of the subsurface is very important for site evaluation for engineering purposes. In this study two dimensional (2D) electrical resistivity survey and cone penetration tests were conducted to study the hazardous effect of excess near surface water on the foundation of building in Victoria Island area of Lagos State. The results of the inverted 2D electrical resistivity data revealed three distinct geoelectrical layers characterized by low to moderate electrical resistivity of 2.23 and 129 and 9.46 to 636 . The topsoil is characterized by wet sandy soil, which is underlain by sandy clay and banded at the below by a geologic formation of low resistivity which is suspected to be clay. The clay material may be responsible for the excess water retention observed in the area. The CPT method on the other hand revealed a geological formation of low resistance to penetration between 2-3 kg/cm2 from the topsoil to a depth of 7 m, which may be the effect of excess water in the near surface. This study revealed that the foundation of building may not be founded directly on the soil as this may result in collapse as a result of upward migration of water to the surface.

Longitudinal Variation of EEJ Current during Different Phases of Solar Cycle

May 3, 2017 10:00

Wan nur izzaty Ismail (National University of Malaysia, Malaysia); Nurul Shazana Abdul Hamid (National University of Malaysia, Malaysia); Mardina Abdullah (Universiti Kebangsaan Malaysia, Malaysia); Akimasa Yoshikawa (Kyushu University, Japan); Teiji Uozumi (Kyushu University, Japan)

Abstract: The equatorial electrojet (EEJ) is an eastward current flow around the dip equator in E-region of the ionosphere within the range of 90 to 120 km altitude. The longitudinal variation of EEJ was studied using the groundbased measurement from six different longitudinal sectors. The ground magnetometer data were provided by magnetometer networks such as those from Magnetic Data Acquisition System (MAGDAS) /Circum-pan Pacific Magnetometer Network (CPMN), Indian Institute of Geomagnetism (IIG) and International Real-time Magnetic Observatory Network (INTERMAGNET). The EUEL index used in this study was calculated from geomagnetic northward H component. The H-component was normalized to the dip equator using the CM4 model. This study present results of the longitudinal variation of EEJ during the three phases of solar cycle 24: solar minimum (2008), inclination phase (2011) and solar maximum (2014). Results show that EEJ current is higher in the American sector and lowest between African and Indian sector in 2008 and 2011. On the other hand, during the year of solar maximum, this current component are comparable in American and Southeast Asian sector.

A short review on the lower troposphere ozone and visibility impairment

May 3, 2017 10:00

Moses Emetere (Covenant University Ota, Nigeria); Marvel Akinyemi (Covenant University, Nigeria)

Abstract: Ozone in the lower planetary boundary layer of the earth atmosphere is toxic to humans and vegetation, because it oxidizes biological tissue. The reduction in visibility is due to scattering of solar radiation by high concentrations of anthropogenic aerosols. Visibility impairment is greatest at high relative humidity when the aerosols swell by uptake of water thereby increasing the cross sectional area for scattering; this is the phenomenon known as haze. Haze has become a major air pollution challenge the aviation industry has to cope with in recent time. In this review, two major problems were spotted to be responsible for air disaster in any region of the world. While some developed countries had almost resolved the challenge of visibility impairment by employing forty years therapy, most developing countries do not have a recovery plan. Therefore, the resolution of this major challenge may be the leverage for most

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developing nations to draw out a recovery plan.

Comparison of relative sunspot numbers measured in Malaysia with International Sunspot Number calculated by SIDC-SILSO

May 3, 2017 10:00

Norzafirah Rasmani (National University of Malaysia, Malaysia); Nurul Shazana Abdul Hamid (National University of Malaysia, Malaysia); Farahana Kamarudin (National Space Agency Of Malaysia & Langkawi National Observatory, Malaysia); Wan Aimran (UKM, Malaysia); Idahwati Sarudin (National University of Malaysia, Malaysia)

Abstract: The accuracy of Langkawi National Observatory (LNO) relative sunspot number (RSN) data has been officially acknowledged when LNO has become one of the contributors to International Sunspot Number (ISN), RISN since June 2015. However, RSN from LNO (RLNO) can only be obtained if the weather is favourable and the instruments are working well. These disadvantages can be solved if there are other observers across Malaysia that can contribute data of RSN to LNO. This research aims to compare the RSN collected by an amateur observer at National Planetarium, RNP with RLNO and RISN. 11 days data between the month of November 2014 and January 2015 are analysed to see the differences between RNP to both RLNO and RISN. Results show that, the value of RNP is lower than RLNO and RISN. The highest percentage difference is between RNP and RISN which is due to the different method and instruments used in observing the sunspot. The correlation of relative sunspot number is high between RLNO and RISN proving the reliability of LNO as contributor to ISN. The observational index is also determined in this study based on the ratio of correction factor of RNP to RLNO.

Atmospheric configurations of aerosols loading and retention over Bolgatanga-Ghana

May 3, 2017 10:00

Moses Emetere (Covenant University Ota, Nigeria); Samuel Sanni (Covenant University, Nigeria); Patience Tunji-Olayeni (Covenant University, Nigeria)

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Abstract: Bolgatanga is located on latitude of 10.78 oN and longitude 0.85 oW. This research is aimed to estimate the aerosols loading and retention over Bolgatanga-Ghana through a conceptual model that is made up of analytical, statistical and Matlab curve-fitting tool. The model's accuracy was established over the aerosol optical depth for a thirteen-year satellite data set from the Multi-angle imaging spectoreflectometer (MISR). The maximum aerosol retention was 31.73%. Its atmospheric constants, tunning constants and the phase difference over Bolgatanga was found to 0.67, 0.24 and respectively. The phase difference expresses the different kinds of network topologies and beam forming methods for measuring devices that may be used in Bolgatanga. Therefore a good estimation of the aerosols loading and retention over Bolgatanga, we may be be in the best position to controlling its effect on health, farming, rainfall pattern, cloud formation and regional climate.

I imb flare measurement from	Langkawi National Observatory	on 5th January 2016
		y on Juli January 2010

May 3, 2017 10:00

Farahana Kamarudin (National Space Agency Of Malaysia & Langkawi National Observatory, Malaysia); Mohammad Redzuan Tahar (Agensi Angkasa Negara, Malaysia); Nor Rafidah Saibaka (National Space Agency of Malaysia (ANGKASA) & Langkawi National Observatory, Malaysia)

Abstract: Sun is the source of energy and has a lot of activity that will be influence the Earth. One of the solar activities is the limb flare or prominence. It release energy and expel outward the Sun surface. Langkawi National Observatory (LNO) had started photographic solar activity in Ha since 2008. LNO used the dedicated solar telescope to monitor and observed the solar activity daily. In 5th January 2016, LNO captured one limb flare at the south-west position of the Sun. The maximum height of the limb flare is 267,347 km and it increase gradually build up the velocity. Luckily, this eruption does not facing and directed towards Earth so the was no significant impact.

Measurements of radioactivity levels in part of Ota Southwestern Nigeria: Implications for radiological hazards indices and excess lifetime cancer-risks

May 3, 2017 10:00

Kehinde David Oyeyemi (Covenant University Nigeria, Nigeria); Mojisola Usikalu (Covenant University, Nigeria); Ahzegbobor Aizebeokhai (Covenant University, Nigeria); Justina Achuka (Covenant University, Nigeria); Jonathan Oluranti (Covenant University, Nigeria)

Abstract: Super SPEC RS-125 radiation detector with a 2.0 x 2.0 NaI crystal and linear energy ranging from 0.80 MeV to 1.2 MeV was used to measure the activities of primordial nuclides and the radiation dose exposures rate in Iyana-Iyesi, Ota, southwestern Nigeria. The measured activities vary from 17 ± 0.02 to 30.49 ± 0.01 , 50.01 ± 0.16 to 158.49±0.17, and 406.9±0.42 to 1275.48±0.82 for 238U, 232Th and 40K respectively. The acquired gamma radiation dose rate range from 138.696 ±2.06 to 350.103±7.21 with mean value of 148.22 , almost three times higher than the recommended safe limit of 55. The measured activities and radiation dose rate were engaged to estimate the annual outdoor effective dose, gamma index, excess lifetime cancer risks and annual gonadal dose equivalent. It was observed from all the estimated parameters, that values in the study area are well above the recommended safe limit for normal background radiation. This suggest that the dwellers and those using the excavated geomaterials from this area for construction purposes are exposed to very high radiation from natural radionuclides. Further research to evaluate the mineralogy and geochemistry of the clay deposits in the area is highly recommended.

Bio: Usikalu Mojisola graduated from Federal University of Technology Akure with B.Tech Degree in Physics and M.Tech Degree in Radiation and Health Physics in 2001 and 2005 respectively. She earned a PhD from Covenant University, Ota in 2010. Usikalu is a corporate member of Nigerian Institute of Physics and Radiation Research Society.

Year to year variation of rainfall rate and rainfall regime in Ota, Southwest Nigeria for the year 2012 to 2015

May 3, 2017 10:00

Temidayo Omotosho (Covenant University & University Kebangsaan Malaysia, Nigeria); Oluwafumilayo Ometan (Lagos State University, Nigeria); Savo A Akinwumi (Covenant University, Nigeria); Mustapha Adewusi (Lagos State University, Nigeria); Adenike Boyo (Lagos State University, Nigeria); Mandeep Singh (University Kebangsaan Malaysia, Malaysia)

Abstract: The tropics is characterized to have convective type of rainfall which has high occurrence of rainfall compared to the temperate regions of the world. In this paper, the accumulation of rainfall in Ota, Southwest, Nigeria (60 42 N, 30 14 E) has been analysed to present the one-minute rainfall rate and the predominant type of rainfall. Four years' data used for this study was taken using the Davis Wireless vantage Pro2 weather station at Covenant University, Ota, Ogun State. The data collected were used to analyse the one-minute rainfall rate and different types of rainfall predominant in this region. For the prediction and modelling of rain attenuation at microwave frequencies for a region like the Nigeria at various percentage of time, one-minute rainfall rate is required. Nigeria falls into the P zone of 114 mm/hr. as per International Telecommunication Union - Recommendation (ITU-R). The analysis carried out indicated that the measured yearly averaged maximum one-minute rainfall rate for 2012, 2013, 2014 and 2015 are 157.7 mm/h, 148.0 mm/h, 241.2 mm/h and 157.3 mm/h respectively. It also indicated that the drizzle type of rainfall is predominant in contrast to established fact that thunderstorm occurs more in the tropics

Bio: I received Masters of Technology and PhD in Physics (Satellite to ground Radiowave Propagation) in January 2004 and June 2008 at the Federal University of Technology Akure and Covenant University Nigeria respectively. Bachelor of Technology (Physics Electronics) in December 1997. I have wealth of experience in using in-situ meteorological data and Satellite remotely sensed data. My works have been published in high impact Journals and presented in many conferences. I have a very good knowledge of Computer programming and visualization of large scientific data, assimilation and analysis. I am a member of IEEE, American Geophysical Union, Nigeria institute of Physics, African Geophysical Society and Nigeria Union of Radio Science. I have supervised Four Masters students which have graduated and three have proceeded for PhD degree under my supervision. I am currently an Associate Professor in the Department of Physics Covenant University Ota Ogun State Nigeria

An analysis of heat wave trends using heat index in East Malaysia

May 3, 2017 10:00

Ahmad Norazhar Mohd Yatim (University of Malaysia Sabah, Malaysia); Wayan Suparta (Universiti Kebangsaan Malaysia, Malaysia)

Abstract: This paper aimed to investigate the heat wave trends in East Malaysia based on the National Weather Services (NWS) Heat Index. The heat index was calculated by using mean temperature and mean relative humidity on monthly basis for 5 meteorological stations in East Malaysia during the period 2008 to 2010. The trends for heat wave were estimated from Heat Index based on the least square regression analysis at each station level. Results showed that the heat wave trends are increasing at all stations. The highest heat index was occurred in Sandakan on July 2010 with heat index 35°C while the lowest heat index happened at Kuching in January 2009 with 27.3°C. From the heat wave observed, East Malaysia is still in caution categories or normal condition (27°C-32°C) and the extreme caution (32°C -41°C) was observed during southwest monsoon (May-July). The safety condition of heat waves in East Malaysia is possibly due to weak to moderate El Niño occurred during the period of observation.

Surface charging of a crater near lunar terminator

May 3, 2017 10:00

Abul Khair Anuar (Universiti Tun Hussein Onn Malaysia, Malaysia)

Abstract: Past lunar missions have shown the presence of dust particles in the lunar exosphere. These particles originate from lunar surface and is due to the charging of lunar surface by the solar wind and solar UV flux. Near the lunar terminator region, the low conductivity of the surface and small scale variations in surface topology could cause the surface to charge to different surface potentials. This paper simulates the variation of surface potential for a crater TEST DOCUMENT — TEST DOCUMENT — TEST DOCUMENT — Document doesn't look right? We'll help you out! — TEST DOCUMENT — TEST DOCUMENT

located in the lunar terminator regions using Spacecraft Plasma Interaction Software (SPIS). SPIS employs particle in cell method to simulate the motion of solar wind particles and photoelectrons. Lunar crater has been found to create mini-wake which affects both electron and ion density and causes small scale potential differences. Simulation results show potential difference of 200 V between sunlit area and shadowed area which creates suitable condition for dust levitation to occur.

Derivation of GPS TEC and receiver bias for Langkawi station in Malaysia

May 3, 2017 15:00

Teh Wai Leong (Universiti Kebangsaan Malaysia, Malaysia); Wei-Sheng Chen (Chien Hsin University of Science and Technology, Taiwan); Mardina Abdullah (Universiti Kebangsaan Malaysia, Malaysia)

Abstract: This paper presents the polynomial-type TEC model to derive total electron content (TEC) and receiver bias for Langkawi (LGKW) station in Malaysia at geographic latitude of 6.320 and longitude of 99.850. The model uses a polynomial function of coordinates of the ionospheric piercing point to describe the TEC distribution in space. In the model, six polynomial coefficients and a receiver bias are unknown which can be solved by the least squares method. A reasonable agreement is achieved for the derivation of TEC and receiver bias for IENG station in Italy, as compared with that derived by the IGS analysis center, CODE. We process one year of LGKW data and show the monthly receiver bias and the seasonal TEC variation. The monthly receiver bias varies between -48 and -24 TECu (10^16 electrons/m^2), with the mean value at -37 TECu. Large variations happen in the monthly receiver biases due to the low data coverage of high satellite elevation angle ($600 < a \le 900$). Post-processing TEC approach is implemented which can resolve the wavy pattern of the monthly TEC baseline resulted from the large variation of the receiver bias. The seasonal TEC variation at LGKW exhibits a semi-annual variation, where the peak occurs during equinoctial months, and the trough during summer and winter months.

Distribution of Ozone Concentration In Klang Valley Using GIS Approaches

May 3, 2017 15:00

Abdul Aziz Ab Rahman (Universiti Kebangsaan Malaysia, Malaysia); Asni Sulaiman (The National University of Malaysia, Malaysia); Khairul Nizam Abdul Maulud (University of National Malaysia, Malaysia); Muhammad Aqiff Abdul WAhid (Universiti Kebangsaan Malaysia, Malaysia); Muhammad Afiq Ibrahim (Universiti Kebangsaan Malaysia, Malaysia); Fatimah Ahamad (Universiti Kebangsaan Malaysia, Malaysia); Mohd Talib Latif (Universiti Kebangsaan Malaysia, Malaysia); Nor Diana Abdul Halim (Universiti Kebangsaan Malaysia, Malaysia)

Abstract: Nowadays ozone begins as one of the main air pollutants of concern in Malaysia. The highest of ozone precursor sources has been encouraging the ozone production. Thus, the development of the Klang Valley, Malaysia have many types of physical activities such as urban commercial, industrial area, settlement area and others until it has conspicuous the risk of atmospheric pollution. The aim of this paper existed to determine the spatial distribution between types of land use and ozone concentration that are occurred in the year 2014. Four different types of monitoring stations were selected in the study which is Shah Alam, Kajang, Petaling Jaya and Port Klang. Distribution of ozone concentration will be showed via spatial analysis tools as a Geographic Information Systems (GIS) approaches and the types of land use will be extracted using Remote Sensing technique. The result shows the ranges of 97 ppb to 161 ppb that are getting by Shah Alam and Port Klang which are mainly representing are settlement area respectively. Thus, the physical activities needs to be controlled by the government because to make sure the ozone production for daily per hour cannot pass on the regulation allowed

Transparent Solar Antenna of 28 GHz Using Transparent Conductive Oxides (TCO) Thin Film

May 3, 2017 15:00

Nur Izzati Mohd Ali (Universiti Kebangsaan Malaysia, Malaysia); Norbahiah Misran (Universiti Kebangsaan Malaysia, Malaysia); Mohd Fais Mansor (Universiti Kebangsaan Malaysia, Malaysia); Faizal Jamlos (Universiti Malaysia Perlis, Malaysia)

Abstract: This paper presents the analysis of 28GHz solar patch antenna using the variations of transparent conductive oxides (TCO) thin film as the radiating patch. Solar antenna is basically combining the function of antenna and solar cell into one device and helps to maximize the usage of surface area. The main problem of the existing solar antenna is the radiating patch which made of nontransparent material, such as copper, shadowing the solar cell and degrades the total solar efficiency. Hence, by using the transparent conductive oxides (TCO) thin film as the radiating patch, this problem can be tackled. The TCO thin film used is varied to ITO, FTO, AgHT-4, and AgHT-8 along with glass as substrate. The simulation of the antenna executed by using Computer Simulation Technology (CST) Microwave Studio software demonstrated at 28 GHz operating frequency for 5G band applications. The performance of the transparent antennas is compared with each other and also with the nontransparent patch antenna that using Rogers RT5880 as substrate, operating at the same resonance frequency and then, the material that gives the best performance is identified.

Micro - Ring Resonator with Variety of Gap Width for acid rain sensing application: Preliminary Simulation Study

May 3, 2017 15:00

Budi Mulyanti (Indonesia University of Education, Indonesia); Harry Ramza (Universitas Muhammadiyah Prof-Dr-HAMKA, Indonesia); Roer Eka Pawinanto (Universiti Kebangsaan Malaysia, Malaysia); Juwairiyyah Abdul Rahman (Unisel, Malaysia); Mohd Syuhaimi Bin Ab Rahman (Universiti Kebangsaan Malaysia, Malaysia); Wahyu Sasongko Putro (Space Science Center (ANGKASA), Institute Of Climate Change (IPI) & The National University Of Malaysia, Malaysia); Lilik Hasanah (Indonesia University of Education (UPI), Indonesia); Arjuni Pantjawati (Universitas Pendidikan Indonesia, Indonesia)

Abstract: Acid rain is an environmental disaster it will be intimidates human life. The development micro-ring resonator sensor created from SOI (Silicon on insulator) used to detect acid rain index. In this study, the Lumerical software was used to simulate SOI material micro-ring resonator. The result shows the optimum values of fixed parameters from ring resonator have dependent variable in gap width. The layers under ring resonator with silicone (Si) and wafer layer of silicone material (Si) were added to seen three conditions of capability model. Model - 3 is an additional of bottom layer that gives the significant effect on the factor of quality. The optimum value is a peak value that given by the FSR calculation. FSR = 0, it means that is not shows the light propagation in the ring resonator and none of the light coming out on the bus - line.

Remote Sensing Assessment of Absorbing Aerosol over Peninsular Malaysia from OMI Onboard Aura Satellite

May 3, 2017 15:00

Kok Chooi Tan (Universiti Sains Malaysia & USM, Malaysia); Hwee-San Lim (Universiti Sains Malaysia, Malaysia); Mohd Zubir MatJafri (Universiti Sains Malaysia, Malaysia)

Abstract: The observation of aerosol index derived from the Ozone Monitoring Instrument (OMI) on board the Dutch-Finnish Aura satellite with spatial resolution 1° x 1° have been analyzed over Peninsular Malaysia for 2013-2015, from June to September, respectively. The results show significant spatial and temporal variabilities in aerosol index with higher values during June 2013 and September 2015. On the other hand, the aerosol index does not show significant differences between the Peninsular Malaysia for the remaining study duration. The high positive aerosol index values over Southern Peninsular Malaysia clearly reveal the ultraviolet absorbing nature of smoke particles affecting the area during Indonesia forest fire, associated with the Southwest monsoon season. The spatial distribution of aerosol index has been analyzed using monthly OMI/Aura data obtained from the NASA-operated GIOVANNI. The result shows that the satellite measurements can measure and observe the increase of the aerosol index over different regions.

Efficient Pricing Technique for Resource Allocation Problem in Downlink OFDM Cognitive Radio **Networks**

May 3, 2017 15:00

Omar B. Abdulghafoor (Al-Madinah International University, Malaysia); Musbah Shaat (CTTC, Spain); Mahamod Ismail (Universiti Kebangsaan Malaysia, Malaysia); Rosdiadee Nordin (Universiti Kebangsaan Malaysia, Malaysia); Tito

Yuwono (Universitas islam Indonesia, Indonesia); Omar Alwahedy (Al-Madinah International University, Faculty of Engineering, Malaysia)

Abstract: In this paper, the problem of resource allocation in OFDM-based downlink cognitive radio (CR) networks has been proposed. The main objective of this study is to reduce the computational complexity of the resource allocation algorithm for downlink CR network while respecting the interference constraint of the primary network. The objective has been secured by adopting pricing scheme to develop a power allocation algorithm with the following objectives: (i) reducing the complexity of the proposed algorithm and (ii) providing firm power control to the interference introduced to the primary users (PUs). The performance of the proposed power allocation algorithm is tested for OFDM-based CRNs. The simulation results show that the performance of the proposed algorithm approached the performance of the optimal algorithm at a lower computational complexity, i.e., O(NlogN), which makes the proposed algorithm suitable for more practical applications.

Extraction of shoreline changes in selangor coastal area using gis and remote sensing techniques

May 3, 2017 15:00

Siti Norsakinah Selamat (The National University of Malaysia, Malaysia); Khairul Nizam Abdul Maulud (University of National Malaysia, Malaysia); Othman Jaafar (University of National Malaysia, Malaysia); Hamizah Ahmad (University of National Malaysia, Malaysia)

Abstract: Nowadays, coastal zones are facing shoreline changes that stemming from natural and anthropogenic effect. The process of erosion and accretion will affect the physical environment of the shoreline. Therefore, the study of shoreline changes is important to identify the patterns of changes over time. The rapid growth of technology nowadays has facilitated the study of shoreline changes. Geographical Information System (GIS) alongside Remote Sensing (RS) technology is a useful tool to study these changes due to its ability to generate information, monitoring, analysis and prediction of the shoreline changes. Hence, the future projection of the trend for a specific coastal area can be done effectively. This study investigates the impact of shoreline changes to the community in Selangor area which mainly focus on the physical aspects. This study presents preliminary result using satellite image from SPOT 5 to identify the shoreline changes from the year 1984 to 2013 at Selangor coastal area. Extraction of shoreline from satellite image is vital to analyze the erosion and accretion along the shoreline area. This study shows that a shoreline change for the whole area is a categorized as a medium case. The total eroded and accretion of Selangor area from 1984 to 2013 are 2558 hectares and 2583 hectares respectively. As a result, Kapar, Jugra, Telok Panglima Garang and Kelanang are categorized as high risk erosion area. Shoreline changes analysis provides essential information to determine on the shoreline changes trends. Therefore, the results of this study can be used as essential information for conservation and preservation of coastal zone management.

Application of ASTER SWIR Bands in Mapping Anomaly Pixels for Antarctic Geological Mapping

May 3, 2017 15:00

Amin Beiranvand Pour (Institute of Geospatial Science & Technology (INSTEG) Universiti Teknologi Malaysia & Universiti Teknologi Malaysia, Malaysia)

Abstract: Independent component analysis (ICA) was applied to shortwave infrared (SWIR) bands of ASTER satellite data for detailed mapping of alteration mineral zones in the context of polar environments, where little prior information is available. The Oscar II coast area north-eastern Graham Land, Antarctic Peninsula (AP) was selected to conduct a remote sensing satellite-based mapping approach to detect alteration mineral assemblages. Anomaly pixels in the ICA image maps related to spectral features of AI-O-H, Fe, Mg-O-H and CO3 groups were detected using SWIR datasets of ASTER. ICA method provided image maps of alteration mineral assemblages and discriminate lithological units with little available geological data for poorly mapped regions and/or without prior geological information for unmapped regions in northern and southern sectors of Oscar II coast area, Graham Land. The results of this investigation demonstrated the applicability of ASTER spectral data for lithological and alteration mineral mapping in poorly exposed lithologies and inaccessible regions, particularly using the image processing algorithm that are capable to detect anomaly pixels targets in the remotely sensed images, where no prior information is available.

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Bio: He has seven papers in economic geology field, which are published in related proceedings in 2004-2009. These papers presented between 2006 until 2008 in 10, 11tH Symposiums of Geological Society of Iran September 2006-2007, The 26th Symposium on Geosciences in February 2008, Iran and The 13,14,15th Symposiums of the Society of Crystallography& Mineralogy of Iran in February 2006,2007,2008. His current research is focused on the identification of alteration minerals associated with hydrothermal copper and gold mineralization and lineament mapping by using The Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER), Landsat Thematic Mapper (TM), Advanced Land Imager (ALI), Hyperion and Phased Array type L-band Synthetic Aperture Radar (PALSAR) satellite data, in the University Of Technology Malaysia. Currently, he has finished post-doctoral in field of remote sensing-geology in the University Of Technology Malaysia. Now, he is senior lecturer in University Of Technology Malaysia. Currently, he also has 23 SCI Journal papers in the field of remote sensing-geology during

Effect of aerosols loading and retention on surface temperature in the DJF months

May 3, 2017 15:00

Moses Emetere (Covenant University Ota, Nigeria)

Abstract: The effect of aerosols loading most often results in aerosols retention in the atmosphere. Aside the health hazards of aerosol retention, its effect on climate change are visible. In this research, it was proposed that the effect of aerosol retention also affects the fluctuation of the surface temperature. The location of study is Enugu, Nigeria (6.4584° N, 7.5464° E). Twenty-nine years GISS Surface Temperature Analysis (GISTEMP) data set and sixteen years MISR aerosol optical data set were used. The fluctuations in the sixteen years aerosol optical depth (AOD) tallied with the surface temperature. The curve-fitting tool of Matlab was used to generate a polynomial for the surface temperature and used to project a five years prediction of the surface temperature.

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Design of a Dual C slot Reflectarray with Enhanced Phase Range Performance

May 3, 2017 15:00

Hasan Malik (University Tun Hussein Onn Malaysia, Malaysia); Muhammad Yusof Ismail (Universiti Tun Hussein Onn Malaysia, Malaysia); Muhammad Amin (Institute of Space Technology, Islamabad, Pakistan)

Abstract: This paper deals with the design, fabrication and performance evaluation of a dual C slot compact reflectarray element. It has been demonstrated that the progressive phase distribution of array elements can be achieved by minor variation of C slot widths, without changing the entire patch dimensions. A comparison between measured and simulated results confirms a wider phase range coverage of 3400 and a 10% bandwidth of 70 MHz have been achieved. A good comparison between simulated and measured results have been exhibited by comparing three different slot widths of the proposed design. It has been demonstrate that wide phase coverage can be achieved using dual C slot configuration.

Design and Analysis of Dual U slot Reflectarray Antenna for X band Applications

May 3, 2017 15:00

Hasan Malik (University Tun Hussein Onn Malaysia, Malaysia); Muhammad Yusof Ismail (Universiti Tun Hussein Onn Malaysia, Malaysia)

Abstract: A novel design of a dual frequency single layer reflectarray antenna is presented for X-band frequency applications. Dual U slots embedded on conventional rectangular microstrip reflectarray have been designed to attain a dual frequency operation. A detailed analysis of the effect on surface current distributions with the introduction of dual U slots is presented. Moreover a parametric study on the variation of significant dimensions of the design have been carried out and analyzed thoroughly using a commercially available CST computer model. Proposed design configurations were fabricated above a 0.508 mm thick substrate of Rogers Duroid 5880. The dual U slot configuration offers a significant dual frequency behavior at 8.54 and 11.56 GHz with 10% bandwidth improvement of 47 and 56 MHz with a reflection loss of -4.54 and 4.11 dB respectively.

Analysis of non-rainy attenuation on earth-space path in Ota, Southwest Nigeria

May 3, 2017 15:00

Temidayo Omotosho (Covenant University & University Kebangsaan Malaysia, Nigeria); Sayo A Akinwumi (Covenant University, Nigeria); Mojisola Usikalu (Covenant University, Nigeria); Oluwafumilayo Ometan (Lagos State University, Nigeria); Mustapha Adewusi (Lagos State University, Nigeria); Mardina Abdullah (Universiti Kebangsaan Malaysia, Malaysia)

Abstract: Propagation effects due to atmospheric gases and tropospheric scintillation requires accurate modelling in the design of satellite communication systems. The combination of the two attenuation phenomena was observed within the period of August 2014 to December 2015. The result of this paper presents the on-going observation and data analysis of non-rainy attenuation on earth-space path in Ota, Southwest Nigeria. Results of clear-sky attenuation vary between 0 dBm and 4.85 dBm in January and February 2015 respectively. While a value of 4.23 dBm and 4.75 dBm were observed in October 2014 and 2015 respectively. The results will be useful for satellite communication system design and will be submitted to ITU-R Study group 3 Databank.

Bio: I received Masters of Technology and PhD in Physics (Satellite to ground Radiowave Propagation) in January 2004 and June 2008 at the Federal University of Technology Akure and Covenant University Nigeria respectively. Bachelor of Technology (Physics Electronics) in December 1997. I have wealth of experience in using in-situ meteorological data and Satellite remotely sensed data. My works have been published in high impact Journals and presented in many conferences. I have a very good knowledge of Computer programming and visualization of large scientific data, assimilation and analysis. I am a member of IEEE, American Geophysical Union, Nigeria institute of Physics, African Geophysical Society and Nigeria Union of Radio Science. I have supervised Four Masters students which have graduated and three have proceeded for PhD degree under my supervision. I am currently an Associate Professor in the Department of Physics Covenant University Ota Ogun State Nigeria

The Analysis of the Algorithms of the Complex Optimal Estimates Interpolation in Tasks of Satellite Navigation

May 3, 2017 15:00

Oleg V. Chernovarov (National Research University Moscow Power Engineering Institute, Russia); Alexander Perov (National Research University Moscow Power Engineering Institute, Russia); Eugenii Boldenkov (National Research University Moscow Power Engineering Institute, Russia); Alexander Faulgaber (Moscow Technical University of Communications and Informatics, Russia)

Abstract: We consider the problem of the synthesis of the optimal complex interpolation algorithms within the fixed interval and in the fixed point for satellite navigation applications. To conduct synthesis, the optimal information process filtering theory is applied. We obtain the optimal interpolation equations within the fixed interval and in the fixed point for the solution of the task of the complex estimation of both envelope delay and Doppler translation of the satellite radio navigating signal. By means of simulation modeling, it is demonstrated that the synthesized interpolation algorithms provide a gain in accuracy of the interpolated estimates of the signal delay in comparison with the corresponding results provided by the filtering estimates, and this gain is 2 and more times. At the same time, the gain in accuracy of the interpolated estimates increases with the interval of interpolation. We also illustrate that the functional efficiency of the interpolation algorithms within the fixed interval and in the fixed point is almost identical. Still, from the point of view of practical implementation, the interpolation algorithm can be recommended as the simpler one technically.

Bio: Data and place of birth: 25.12.1973, Voronezh (USSR)

Objective: • Doctor of Sciences, Professor of Electronics, Mathematics and Physics at the National Research University "MPEI".

Area of scientific interests: • Statistical radio engineering and radio physics. Development and application of statistical methods for obtaining, transfer and processing of information. • Digital signal and image processing. Development of algorithms of filtering, recognition and low bit rate coding of signals and images.

Work History: Professor (Associate Professor), Department of Radio Engineering Devices (Department of Radio Engineering, Department of Radio Engineering Systems) National Research University "MPEI" 2007 – at present Moscow Technical University of Communications and Informatics 2004–2011 Voronezh State University and Voronezh State Technical University 1997–2004 • Teach radio engineering, electrical and electronics engineering, the theory of electrical circuits, signal detection theory, mathematical modeling, digital signal processing, computer software design in classroom and laboratory. • Develop and create teaching programs and manuals on statistic radio engineering and radio physics as well as on the subjects mentioned above. • Supervise and co-ordinate the research teams. • Evaluate and supervise research works of Ph.D. students. Conduct examinations. • Assess present and future goals, programs, plans and professional performances of teaching staff.

Supervises by 3 PhD students and 2 applicants for PhD (trained 3 PhD).

Engineer-Designer, Voronezh Research Communication Institute (JCS Concern "Sozvezdie") 1994-2007 • Develop the practically realizable noise-immune signal processing algorithms including the pulse signals with a random substructure and the speech signals. • Develop the algorithms of speech signals as to be able to recognize and to check the identity of a speaker. • Manage the radio-engineering subsidiary of the Voronezh Research Communication Institute.

Education: 2011 Doctor of Sciences (in Physics and Mathematics), Moscow Pedagogic State University. 2007–2010 Doctoral Studies in Physics and Mathematics, Majors: Radio physics, National Research University "MPEI". 2003 Academic Title "Associate Professor on Department of Radio Engineering", Voronezh State Technical University. 2000 PhD in Physics and Mathematics, Voronezh State University. 1996–1999 Post-graduate Studies in Physics and Mathematics, Majors: Radio physics, Voronezh State University. 1994–1996 Master's Degree in Physics, Honor Student, Voronezh State University. 1990–1994 Bachelor's Degree in Physics, Honor Student, Voronezh State University. 1990 Silver Medal from Russian Government for outstanding studies during high school.

Participation in research projects:

As supervisor 2013-2015 • New radar methods of remote sensing and monitoring of an ruffled sea surface and ice environment (financed by Russian Foundation for Basic Research).

2012 • Development of radar methods of remote sensing and monitoring of a sea surface and ice conditions for new power efficient northern sea field development protection of hydrocarbons and their mining operations (financed by Federal Target Programme «Scientific and Educational Personnel of Innovation Russia» on 2009 – 2013, Ministry of Education and Science of the Russian Federation). • Development of statistical processing and analysis methods of ultra wide band signals and fields in the presence of random distortions under conditions of complex prior uncertainty (financed by Federal Target Programme «Scientific and Educational Personnel of Innovation Russia» on 2009 – 2013, Ministry of Education and Science of the Russian Federation). • Development of statistical analysis methods of non-stationary random processes under conditions of parametrical prior uncertainty and abrupt-smooth change of their statistical characteristics (financed by Federal Target Programme «Scientific and Education and Science of Innovation Russia» on 2009 – 2013, Ministry of Education and Science of the Russian Federation (financed prior uncertainty and abrupt-smooth change of their statistical characteristics (financed by Federal Target Programme «Scientific and Educational Personnel of Innovation Russia» on 2009 – 2013, Ministry of Education and Science of the Russian Federation).

As responsible executor 2014-2016 • New methods and algorithms of combined processing of signals and images with unknown parameters in the promising radar and communication systems (financed by Russian Science Foundation). • Development of the theory of transfer, reception and processing of complex signals in information-telecommunication systems (financed by Ministry of Education and Science of the Russian Federation).

2013-2015 • New methods and algorithms of high-precision remote sensing and monitoring of solid and surface extended objects for effectiveness increase of field development and exploitation of mineral deposits and prevention of industrial disasters (financed by Russian Foundation for Basic Research).

Rewards: 2011 Winner of the National Scholarship Programme of the Slovak Republic for foreign scientists. 2006–2008 Prize-winner of the creative grant of Public Corporation «Mobile Telesystems» (Russia). 1999 Diploma awarded by the Russian Scientific and Technical Popov's Company of Radio and Electronic Engineering and Communication for a research work: "Theoretical and practical research on the algorithms of the processing signals with random substructure and unknown parameters". 1998 Winner of the prize awarded by the President of Russian Federation for outstanding research works. 1997 Diploma awarded by the International Soros Science Education Program in recognition and appreciation of outstanding achievements in the study of science. Named as a Soros Graduate Student.

Published works: more than 100.

Response of lightning energy and total electron content with sprites over Antarctic Peninsula

May 3, 2017 15:00

Wayan Suparta (Universiti Kebangsaan Malaysia, Malaysia); Norbayah Yusop (Utem, Malaysia)

Abstract: This paper investigates the response of the lightning energy with the total electron content (TEC) derived from GPS over Antarctic Peninsula during St Patrick's geomagnetic storm. During this event, sprite as one of the mesospheric transient luminous events (TLEs) associated with positive cloud-to-ground (+CG) lightning discharges can be generated. In this work, GPS and lightning data for the period from 14 to 20 March 2015 is analyzed. Geomagnetic activity and electric field data are also processed to relate the geomagnetic storm and lightning. Results show that during St Patrick's geomagnetic storm, the lighting energy was produced up to ~257 kJ. The ionospheric TEC was obtained 60 TECU, 38 TECU and 78 TECU between 18:00 and 21:00 UT for OHI3, PALV and ROTH stations, respectively. The peak of lightning energy was observed 14 hours after peaked of TEC. Sprite possibly generated through the electrical coupling process between the top cloud, middle and upper atmosphere with the DC electric field found to be ~10 mVm-1 which leading to the sprite generation after the return strokes on 18 March 2015.

Spectral Mineral Mapping for Characterization of Subtle Geothermal Prospects Using ASTER data

May 3, 2017 15:00

Amin Beiranvand Pour (Institute of Geospatial Science & Technology (INSTEG) Universiti Teknologi Malaysia & Universiti Teknologi Malaysia, Malaysia); Aliyu Ja'afar Abubakar (Universiti Teknologi Malaysia, Korea)

Abstract: this study evaluated the performance of ASTER data in mapping subtle geothermal prospects in an unexplored tropical region having a number of thermal springs. The study employed a simple Decorrelation stretch with specific absorptions to highlight possible alteration zones of interest related to Geothermal (GT) systems. Hydrothermal alteration minerals are then mapped using Spectral Angle Mapper (SAM) and Linear Spectral Unmixing (LSU) techniques to target representative minerals such as clays, carbonates and AL-OH minerals as indicators of GT activity. The results were validated through field GPS survey, rock sampling and laboratory analysis using latest smart lab X-Ray Diffractometer technology. The study indicates that ASTER broad band satellite data could be used to map subtle GT prospects with the aid of an in-situ verification. However, it also shows that ASTER could not discriminate within specie minerals especially for clays using SWIR bands. Subsequent studies are aimed at looking at both ASTER and Hyperion hyperspectral data in the same area as this could have significant implications for GT resource detection in unmapped aseismic and inaccessible tropical regions using available spaceborne data.

Investigation to determine the vulnerability of reclaimed land to building collapse using near surface seismic refraction method

May 4, 2017 10:30

Olusegun Adewoyin (Covenant University & College of Science and Technology, Nigeria)

Abstract: Adequate knowledge of the geology and the structures of the subsurface would assist engineers in the best way to carry out constructions to avoid building collapse. In this study, near surface seismic refraction method was used to determine the geotechnical parameters of the subsurface, the results obtained were correlated by the result of borehole data drilled in the study area. The results of seismic refraction method delineated mostly two distinct layers with the first layer having the lower geotechnical parameters. It was observed that in the first layer, the Young's modulus ranged from 0.168 to 0.458 GPa , shear modulus ranged between 0.068 and 0.185 GPa, the bulk modulus ranged between 0.106 and 0.287 GPa while the bearing capacity ranged from 0.083 to 0.139 MPa. The formation of the second layer appeared to be more competent than the first layer, therefore engineering construction in this geological setting is recommended to be founded on the second layer at depth ranging between 7 and 16 m.

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Solar Charged Laboratory Bench Power Supply

May 4, 2017 10:30

Williams Ayara (Covenant University, Nigeria); Temidayo Omotosho (Covenant University & University Kebangsaan Malaysia, Nigeria); Mojisola Usikalu (Covenant University, Nigeria); Mandeep Singh (University Kebangsaan Malaysia, Malaysia)

Abstract: This product is an improvement on available DC laboratory bench power supply. It is capable of delivering low voltage Alternating Current (AC) and Direct Current (DC) to carry out basic laboratory experiment for both secondary schools and also at higher education institutions. The power supply is capable of delivering fixed DC voltages of 5V, 9V, 12V, variable voltage of between 1.25-30V and a 12V AC voltage. Also Incorporated is a USB port that allows for charging cell phones and other mobile devices, and a dedicated 12V DC output to power 5-7 Watt LED bulb to provide illumination in the laboratory for the instructor who may need to work at night in the absence of utility power

Estimation of Lidar Ratios during Haze Events in Penang, Malaysia

May 4, 2017 10:30

Wei Ying Khor (Universiti Sains Malaysia, Malaysia); Mohd Zubir MatJafri (Universiti Sains Malaysia, Malaysia); Hwee-San Lim (Universiti Sains Malaysia, Malaysia)

Abstract: Haze events occurred in Malaysia three times during the years of 2014 and 2015. Humidity and visibility parameters are obtained and used to estimate the Lidar ratio (LR) values during these three haze events using the algorithm generated. The possible aerosol types during the haze was also evaluated. The haze event that happened from August to October 2015 was the worst among the three cases with a maximum LR value of 177 sr. The LR value also range from 50 sr to 145 sr. The possible aerosol type during the haze events are highly light absorbing particles such as the biomass burning aerosols. The LR values are much larger compared to other literature which may be due to overestimation.

Peak Time of Equatorial Electrojet from Different Longitude Sectors during Fall Solar Minimum

May 4, 2017 10:30

Nurul Shazana Abdul Hamid (National University of Malaysia, Malaysia); Huixin Liu (Kyushu University, Japan); Teiji Uozumi (Kyushu University, Japan); Akimasa Yoshikawa (Kyushu University, Japan); Norhani Muhammad Nasir Annadurai (Universiti Kebangsaan Malaysia, Malaysia)

Abstract: Equatorial electrojet is an eastward flowing current at about $\pm 3^{\circ}$ dip equator. This current intensity is always higher during noontime as it is greatly influenced by the ionization of Earth ionosphere. Apart from that, previous study had shown that EEJ current varies with longitude and latitude as well as solar cycle. The aim of this study is to investigate the peak time of EEJ current at different longitude sectors using simultaneous data in 2009. By eliminating Sq current contribution and normalizing ground-based data from MAGDAS/CPMN, IIG and WDC network, we manage to reach our purpose and gain reliable output. We found out that EEJ is always strongest in South American sector. Our results show that the peak EEJ during fall solar minimum is observed at 11 LT for South American, Indian and Southeast Asian sector but it is 1 hr earlier in African sector.

Bio: Dr. Nurul Shazana Abdul Hamid obtained her PhD in Space and Earth Electromagnetism from Kyushu University on 2014. Her study focuses on ionospheric region, mainly about equatorial electrojet currents. Her presentation is a continuation of her work which presented in IconSpace 2013.

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Satellite observation analysis of aerosols loading effect over Monrovia-Liberia

May 4, 2017 10:30

Moses Emetere (Covenant University Ota, Nigeria)

Abstract: The effect of aerosols loading most often results in aerosols retention in the atmosphere. Aside the health hazards of aerosol retention, its effect on climate change are visible. In this research, it was proposed that the effect of aerosol retention also affects. The Tropical Rainfall Measuring Mission (TRMM) layer 3 observations and the multi-imaging spectro-reflectometer (MISR) was used for the study. The aerosols loading over were investigated using sixteen years satellite observation in Monrovia-Liberia. Its effect on the rain rate over the region was documented. The results show that aerosol loading over the region is high and may have effect on farming in the nearest future. It was affirmed that the scanty AOD data was as a result of the rain rate that is higher within May and October.

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Alteration Mineral Mapping in Inaccessible Regions Using Target detection Algorithms to ASTER Data

May 4, 2017 10:30

Amin Beiranvand Pour (Institute of Geospatial Science & Technology (INSTEG) Universiti Teknologi Malavsia & Universiti Teknologi Malaysia, Malaysia); Yongcheol Park (Korea Polar Research Institute (KOPRI), Korea)

Abstract: In this study, the applications of target detection algorithms such as Constrained Energy Minimization (CEM), Orthogonal Subspace Projection (OSP) and Adaptive Coherence Estimator (ACE) to shortwave infrared bands of the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) data was investigated to extract geological information for alteration mineral mapping in poorly exposed lithologies in inaccessible domains. The Oscar II coast area north-eastern Graham Land, Antarctic Peninsula (AP) was selected in this study to conduct a satellitebased remote sensing mapping technique. It is an inaccessible region due to the remoteness of many rock exposures and the necessity to travel over sever mountainous and glacier-cover terrains for geological field mapping and sample collection. Fractional abundance of alteration minerals such as muscovite, kaolinite, illite, montmorillonite, epidote, chlorite and biotite were identified in alteration zones using CEM, OSP and ACE algorithms in poorly mapped and unmapped zones at district scale for the Oscar II coast area. The results of this investigation demonstrated the applicability of ASTER shortwave infrared spectral data for lithological and alteration mineral mapping in poorly exposed lithologies and inaccessible regions, particularly using the image processing algorithms that are capable to detect sub-pixel targets in the remotely sensed images, where no prior information is available.

Bio: He has seven papers in economic geology field, which are published in related proceedings in 2004-2009. These papers presented between 2006 until 2008 in 10, 11tH Symposiums of Geological Society of Iran September 2006-2007, The 26th Symposium on Geosciences in February 2008, Iran and The 13,14,15th Symposiums of the Society of Crystallography& Mineralogy of Iran in February 2006,2007,2008. His current research is focused on the identification of alteration minerals associated with hydrothermal copper and gold mineralization and lineament mapping by using The Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER), Landsat Thematic Mapper (TM), Advanced Land Imager (ALI), Hyperion and Phased Array type L-band Synthetic Aperture Radar



(PALSAR) satellite data, in the University Of Technology Malaysia. Currently, he has finished post-doctoral in field of remote sensing-geology in the University Of Technology Malaysia. Now, he is senior lecturer in University Of Technology Malaysia. Currently, he also has 23 SCI Journal papers in the field of remote sensing-geology during 2011-2014

Mapping Land Slide Occurance Zones Using Remote Sensing and GIS techniques in Kelantan state, Malaysia

May 4, 2017 10:30

Amin Beiranvand Pour (Institute of Geospatial Science & Technology (INSTEG) Universiti Teknologi Malaysia & Universiti Teknologi Malaysia, Malaysia)

Abstract: Integration of satellite remote sensing data and Geographic Information System (GIS) techniques is one of the most applicable approach for landslide mapping and identification of high potential risk and susceptible zones in

tropical environments. Yearly, several landslides occur during heavy monsoon rainfall in Kelantan river basin, Peninsular Malaysia. In this investigation, Landsat-8 and Phased Array type L-band Synthetic Aperture Radar-2 (PALSAR-2) remote sensing data sets were integrated with GIS analysis for detect, map and characterize landslide occurances during December 2014 foolding period in the Kelantan river basin. Landslides were determined by tracking changes in vegetation pixel data using Landsat-8 images that acquired before and after December 2014 flooding for the study area. The PALSAR-2 data were used for mapping of major geological structures and detailed characterizations of lineaments in the state of Kelantan. Analytical Hierarchy Process (AHP) approach was used for landslide susceptibility mapping. Several factors such as slope, aspect, soil, lithology, Normalized Difference Vegetation Index (NDVI), land cover, distance to drainage, precipitation, distance to fault, and distance to road were extracted from remote sensing satellite data and fieldwork to apply AHP approach. Two main outputs of this study were landslide inventory occurrences map during 2014 flooding episode and landslide susceptibility map for entire the Kelantan state. Modelled/predicted landslides with susceptible map generated prior and post flood episode, confirmed that intense rainfall in the Kelantan have contributed to weightage of numerous landslides with various sizes. It is conclded that precipitation is the most influential factor that bare to landslide event.

Bio: He has seven papers in economic geology field, which are published in related proceedings in 2004-2009. These papers presented between 2006 until 2008 in 10, 11tH Symposiums of Geological Society of Iran September 2006-2007, The 26th Symposium on Geosciences in February 2008, Iran and The 13,14,15th Symposiums of the Society of Crystallography& Mineralogy of Iran in February 2006,2007,2008. His current research is focused on the identification of alteration minerals associated with hydrothermal copper and gold mineralization and lineament mapping by using The Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER), Landsat Thematic Mapper (TM), Advanced Land Imager (ALI), Hyperion and Phased Array type L-band Synthetic Aperture Radar



(PALSAR) satellite data, in the University Of Technology Malaysia. Currently, he has finished post-doctoral in field of remote sensing-geology in the University Of Technology Malaysia. Now, he is senior lecturer in University Of Technology Malaysia. Currently, he also has 23 SCI Journal papers in the field of remote sensing-geology during 2011-2014

Measurement of Radon Concentration in Selected Houses in Ibadan, Nigeria

May 4, 2017 10:30

Mojisola Usikalu (Covenant University, Nigeria); Victor Olatinwo (College of Medicine, Lagos, Nigeria); Michael Akpochafor (College of Medicine, Lagos, Nigeria); Moses Aweda (College of Medicine, University of Lagos, Nigeria); Gianrossano Giannini (INFN Trieste, Italy); Vascotto Massimo (INFN, Italy)

Abstract: Radon is a natural radioactive gas without colour or odour and tasteless. The World Health Organization (WHO) grouped radon as a human lung carcinogen. For this reason, there has been a lot of interest on the effects of radon exposure to people all over the world and Nigeria is no exception. The aim of this study is to investigate the radon concentration in selected houses in three local government areas of Ibadan. The indoor radon was measured in both mud and brick houses. Fifty houses were considered from the three Local government areas. A calibrated portable continuous radon monitor type (RAD7) manufactured by Durridge company was used for the measurement. A distance of 100 to 200 m was maintained between houses in all the locations. The living room was kept closed during the measurements. The mean radon concentration measured in Egbeda is 10.54 ± 1.30 ; Lagelu is $16.90 \pm$ 6.31 and Ona-Ara is 17.95 ± 1.72 . The mean value of the annual absorbed dose and annual effective dose for the locations in the three local government areas was 0.19 mSvy-1 and 0.48 mSvy-1 respectively. The radon concentration for location 10 in Ono-Ara local government exceeded the recommended limit. However, the overall average indoor radon concentration of the three local governments was found to be lower than the world average value of 40 Bqm-3. Hence, there is need for proper awareness about the danger of radon accumulation in dwelling places.

Bio: Usikalu Mojisola graduated from Federal University of Technology Akure with B.Tech Degree in Physics and M.Tech Degree in Radiation and Health Physics in 2001 and 2005 respectively. She earned a PhD from Covenant University, Ota in 2010. Usikalu is a corporate member of Nigerian Institute of Physics and Radiation Research Society.

Comparison of ionospheric profile parameters with IRI-2012 model over Jicamarca

May 4, 2017 10:30

Saeed Abioye Bello (Universiti Kebangsaan Malaysia, Malaysia); Mardina Abdullah (Universiti Kebangsaan Malaysia, Malaysia); Nurul Shazana Abdul Hamid (National University of Malaysia, Malaysia); Reinisch Bodo (Center for Atmospheric Research, University of Massachusetts, USA)

Abstract: We used the hourly ionogram data obtained from Jicamarca station (12° S, 76.9° W, dip latitude: 1.0° N) an equatorial region to study the variation of the electron density profile parameters: maximum height of F2-layet (hmF2), bottomside thickness (B0) and shape (B1) parameter of F2-layer. The period of study is for the year 2010 (solar minimum period) The diurnal monthly averages of these parameters are compared with the most updated IRI-2012 model. The results show that hmF2 is highest during the daytime than nighttime and this, in turn, modulates the thickness of the bottomside F2-layer. The observed hmF2 and B0 post-sunset peak is as result of the upward drift velocity of ionospheric plasma. We found a close agreement between IRI-CCIR hmF2 model and observed hmF2 during 0000-0700 LT while outside this period the model values deviate significantly with the observational values. Significant discrepancies are observed between the IRI model options for B0 and the observed B0 values. Specifically, the modelled values do not show B0 post-sunset peak. A fairly good agreement was observed between the observed B1 and IRI model options for B1.

Irregularities of ionospheric VTEC during Lightning Activity over Antarctic Peninsula

May 4, 2017 10:30

Wayan Suparta (Universiti Kebangsaan Malaysia, Malaysia); Wan Nur Arina Binti Wan Mohd Nor (Universiti Kebangsaan Malaysia, Malaysia)

Abstract: This paper investigates the irregularities of vertical total electron content (VTEC) during lightning activity and geomagnetic quiet days over Antarctic Peninsula in year 2014. During the lightning event, the ionosphere may be disturbed which may cause disruption in the radio signal. Thus, it is important to understand the influence of lightning on VTEC in the study of upper-lower interaction. The lightning data is obtained from World Wide Lightning Location Network (WWLLN) and the VTEC data has analyzed from Global Positioning System (GPS) for O'Higgins (OHI3), Palmer (PALV), and Rothera (ROTH). The results demonstrate the VTEC variation of ~0.2 TECU during low lightning activity which could be caused by energy dissipation through lightning discharges from troposphere into the thermosphere.

Altering rainfall patterns through aerosol dispersion

May 4, 2017 14:45

Moses Emetere (Covenant University Ota, Nigeria); Muhammad Bakeko (Federal Polytechnic Bida, Nigeria); Williams Ayara (Covenant University, Nigeria)

Abstract: The possibility of recirculation mechanism on rainfall patterns is salient for sustenance of the human race through agricultural produce. The peculiarity of the lower atmosphere of south west region of Nigeria was explored using theoretical and experimental approach. In the theoretical approach, the reconstruction of 1D model as an extraction from the 3D aerosol dispersion model was used to examine the physics of the recirculation theory. The experimental approach which consists of obtaining dataset from ground instruments was used to provide on-site guide for developing the new recirculation theories. The data set was obtained from the Davis weather station, Nigeria Meteorological agency and Multi-angle Imaging Spectro-radiometer (MISR). We looked at the main drivers of recirculation and

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propounded that recirculation is a complex process which triggers a reordering of the mixing layer- a key factor for initiating the type of rainfall in this region

Impact of Meteorological Parameters over Covenant University, Ota, Nigeria

May 4, 2017 14:45

Olukayode Falayi (Tai Solarin University of Education, Nigeria); Mojisola Usikalu (Covenant University, Nigeria); Temidayo Omotosho (Covenant University & University Kebangsaan Malaysia, Nigeria); Olurotimi Ojoniyi (Tai Solarin University of Education, Nigeria); Sayo A Akinwumi (Covenant University, Nigeria)

Abstract: This study utilized monthly daily values of solar radiation, humidity, ultraviolet dose, temperature, pressure and wind speed obtained at Department of Physics, Covenant University, Ota, Nigeria, for 2013. It was observed that correlation coefficients vary from 0.134 - 0.955 across the months. This was further demonstrated with values of coefficient of determination R2 which vary from 0.018-0.911 for Ota stations. Based on the RMSE, MPE, MBE and p values, we obtained an Equation that produces the best correlation. Our result reveals the models that produce the smallest p values which are considered as the best model for estimating the solar radiation at Ota site with an acceptable error. Also, Wavelet spectrum based approach was employed to analyse the meteorological monthly series in a sequence of monthly scales of January to December 2013.

Bio: I received Masters of Technology and PhD in Physics (Satellite to ground Radiowave Propagation) in January 2004 and June 2008 at the Federal University of Technology Akure and Covenant University Nigeria respectively. Bachelor of Technology (Physics Electronics) in December 1997. I have wealth of experience in using in-situ meteorological data and Satellite remotely sensed data. My works have been published in high impact Journals and presented in many conferences. I have a very good knowledge of Computer programming and visualization of large scientific data, assimilation and analysis. I am a member of IEEE, American Geophysical Union, Nigeria institute of Physics, African Geophysical Society and Nigeria Union of Radio Science. I have supervised Four Masters students which have graduated and three have proceeded for PhD degree under my supervision. I am currently an Associate Professor in the Department of Physics Covenant University Ota Ogun State Nigeria

Background Radiation Dose of Dumpsites in Ota and Environs

May 4, 2017 14:45

Mojisola Usikalu (Covenant University, Nigeria); Justina Achuka (Covenant University, Nigeria); Williams Ayara (Covenant University, Nigeria); Idowu Babarimisa (Covenant University, Nigeria); Olumuyiwa Ola (Covenant University, Nigeria)

Abstract: In-situ measurement of background radiation dose from selected dumpsites in Ota and its environs was done using Radialert Nuclear Radiation Monitor (Digilert 200). Ten measurements were taken from each dumpsite. The measured background radiation range between 0.015 mR/hr for AOD and 0.028 mR/hr for SUS dumpsites. The calculated annual equivalent doses vary between 1.31 mSv/yr for AOD and 2.28 mSv/yr for SUS dumpsites. The air absorbed dose calculated ranged from 150 nGy/hr to 280 nGy/hr for AOD and SUS dumpsites respectively with an average value of 217 nGy/hr for all the locations. All the estimated parameters were higher than permissible limit set for background radiation for the general public. Conclusively, the associated challenge and radiation burden posed by the wastes on the studied locations and scavengers is high. Therefore, there is need by the regulatory authorities to look into the way and how waste can be properly managed so as to alleviate the effects on the populace leaving and working in the dumpsites vicinity.

Bio: Usikalu Mojisola graduated from Federal University of Technology Akure with B.Tech Degree in Physics and M.Tech Degree in Radiation and Health Physics in 2001 and 2005 respectively. She earned a PhD from Covenant University, Ota in 2010. Usikalu is a corporate member of Nigerian Institute of Physics and Radiation Research Society.

Validation of Sea Levels from Coastal Altimetry Waveform Retracking Expert System: A Case Study around the Prince William Sound in Alaska

May 4, 2017 14:45

Nurul Hazrina Idris (UTM, Malaysia); Xiaoli Deng (Assoc. Prof, Australia); Nurul Hawani Idris (Universiti Teknologi Malaysia, Malaysia)

Abstract: This paper presents the validation of Coastal Altimetry Waveform Retracking Expert System (CAWRES), a novel method to optimize the Jason satellite altimetric sea levels from multiple retracking solutions. The validation is conducted over the region of Prince William Sound in Alaska, USA, where altimetric waveforms are perturbed by emerged land and sea states. Validation is performed in twofold. First, comparison with existing retrackers (i.e. MLE4 and Ice) from the Sensor Geophysical Data Records (SGDR), and second, comparison with in-situ tide gauge data. From the first validation assessment, in general, CAWRES outperforms the MLE4 and Ice retrackers. In 4 out of 6 cases, the value of improvement percentage (standard deviation of difference) is higher (lower) than those of the SGDR retrackers. CAWRES also presents the best performance in producing valid observations, and has the lowest noise when compared to the SGDR retrackers. From the second assessment with tide gauge, CAWRES retracked sea level anomalies (SLAs) are consistent with those of the tide gauge. The accuracy of CAWRES retracked SLAs is slightly better than those of the MLE4. However, the performance of Ice retracker is better than those of CAWRES and MLE4, suggesting the empirical-based retracker is more effective. The results demonstrate that the CAWRES would have potential to be applied to coastal regions elsewhere.

Bio: Dr. Nurul Hazrina Idris is a senior lecturer at Universiti Teknologi Malaysia. She received her BS and MS degrees in Remote Sensing from Universiti Teknologi Malaysia in 2005 and 2009, respectively, and her PhD degree in Civil Engineering from the University of Newcastle Australia in 2014. Her current research interests include coastal altimetry, sea level rise, ocean current dynamics and marine Remote Sensing. She is a member of International Association of Geodesy, The Institute of Electrical & Electronics Engineers, and Royal Institute of Surveyors Malaysia.

Investigation of Zonal Velocity Equatorial Plasma Bubbles (EPBs) by using GPS data

May 4, 2017 14:45

Idahwati Sarudin (National University of Malaysia, Malaysia); Nurul Shazana Abdul Hamid (National University of Malaysia, Malaysia); Mardina Abdullah (Universiti Kebangsaan Malaysia, Malaysia); Suhaila Buhari (Space Science Centre (ANGKASA), Malaysia)

Abstract: The zonal velocity of equatorial plasma bubbles (EPBs) have been studied using various techniques in the past few years. However, the derivation of the zonal drift of EPBs using GPS ROTI have not been studied before. This study aims to investigate the zonal drifts of EPBs using GPS ROTI keogram. Malaysia Real -Time Kinematics GNSS Network (MyRTKnet) which consists of 78 GPS receivers was used to investigate the occurrence of EPBs along 96°E - 120°E longitude. The EPBs are detected from daily ROTI keogram that derived from the east-west cross section of 2D ROTI maps at 5°N for every 5 minutes. On the night of 29 March 2011, 10 consecutive EPBs with periodic spacing between 50 km to 100 km were recorded by MyRTKnet. In this study, we obtained



that highest drift velocity is about 277.7 m at 1400 UT which denoted by EPB 7 whereas the lowest drift velocity is EPB 4 with 27.8 m at 1600 UT. Besides, the EPBs are propagated towards the east from 200 km to 2800 km with average velocities is about 55.6 m to 138.9 m.

Aerosols loading statistical dimensions over Serekunda-Gambia

May 4, 2017 14:45

Moses Emetere (Covenant University Ota, Nigeria)

Abstract: Aerosols loading and retention justifies the efficiency of the 'self-cleansing' mechanism of the geographical air space. The advantage of the proposed technique which is based on the coefficient of variation helps to estimate the aerosols retention over a geographical area without necessarily going through the complexities of formulating sectional equations to illustrate the physics of the atmosphere. The system of aerosol retention over Serekunda suggests that air pollution should be taken more seriously to avoid natural disasters in the nearest future. It was discovered that the 'self-cleansing' cycle over Serekunda is four years. The year with a fairly high aerosols retention and correlation was between 2006 & 2007 i.e. 36.82 and 0.61 respectively.

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Modelling Airborne Dispersion for Disaster Management

May 4, 2017 14:45

Ivin Amri Musliman (UTM, Malaysia)

Abstract: Industrial disasters, like any other disasters, can happen anytime, anywhere and in any form. Airborne industrial disaster is a kind of catastrophic event involving the release of particles such as chemicals and industrial wastes into environment in gaseous form, for instance gas leakages. Unlike solid and liquid materials, gases are often colourless and odourless, the particles are too tiny to be visible to the naked eyes; hence it is difficult to identify the presence of the gases and to tell the dispersion and location of the substance. This study is to develop an application prototype to perform simulation modelling on the gas particles to determine the dispersion of the gas particles and to identify the coverage of the affected area. The prototype adopted Lagrangian Particle Dispersion (LPD) model to calculate the position of the gas particles under the influence of wind and turbulent velocity components, which are the induced wind due to the rotation of the Earth, and Convex Hull algorithm to identify the convex points of the gas cloud to form the polygon of the coverage area. The application performs intersection and overlay analysis over a set of landuse data at Pasir Gudang, Johor industrial and residential area. Results from the analysis would be useful to tell the percentage and extent of the affected area, and are useful for the disaster management to evacuate people from the affected area. The developed application can significantly increase efficiency of emergency handling during a crisis. For example, by using a simulation model, the emergency handling can predict what is going to happen next, so people can be well informed and preparations works can be done earlier and better. Subsequently, this application helps a lot in the decision making process.

Estimation water vapor content using the mixing ratio method and validated with the ANFIS PWV model

May 4, 2017 14:45

Wayan Suparta (Universiti Kebangsaan Malaysia, Malaysia); Kemal Alhasa (Universiti Kebangsaan Malaysia, Malaysia); Mandeep Singh (UKM, Malaysia)

Abstract: This study reported the comparison between water vapor content, the surface meteorological data (pressure, temperature, and relative humidity), and precipitable water vapor (PWV) produced by PWV from adaptive neuro fuzzy inference system (ANFIS) for areas in the Universiti Kebangsaan Malaysia Bangi (UKMB) station. The water vapor content value was estimated with mixing ratio method and the surface meteorological data as the parameter inputs. The accuracy of water vapor content was validated with PWV from ANFIS PWV model for the period of 20-23 December 2016. The result showed that the water vapor content has a similar trend with the PWV which produced by ANFIS PWV model (r = 0.975 at the 99% confidence level). This indicates that the water vapor content that obtained with mixing ratio agreed very well with the ANFIS PWV model. In addition, this study also found, the pattern of water vapor content and PWV have more influenced by the relative humidity.

Bio: Presented my bio data, I am a master student and Graduate Research Assistant (GRA) at the Institute of Space Science (Angkasa) Universiti Kebangsaan Malaysia. Currently, I am doing a research in the project entitled "Real-time Development of Precipitable Water Vapor using an Adaptive Neuro Fuzzy Inference System" under FRGS grant. In this research, I study the adaptive neuro fuzzy inference system (ANFIS) for modeling estimation and prediction of precipitable water vapor

Installing the earth station of Ka-band satellite frequency in Malaysia: Conceptual framework for site decision

May 4, 2017 14:45

Mohd. Rizaludin Mahmud (Geoscience & Digital Earth Centre & Universiti Teknologi Malaysia, Malaysia)

Abstract: This paper developed a conceptual framework in determining the suitable location in installing the earth station for Ka-band satellite communication in Malaysia. This current evolution of high throughput satellites experienced major challenge due to Malaysian climate. Because Ka-band frequency is highly attenuated by the rainfall; it is an enormous challenge to define the most appropriate site for the static communication. Site diversity, a measure to anticipate this conflict by choosing less attenuated region and geographically change the transmission strategy on season basis require accurate spatio-temporal information on the geographical, environmental and hydroTEST DOCUMENT — TEST DOCUMENT — TEST DOCUMENT — Document doesn't look right? We'll help you out! — TEST DOCUMENT — TEST DOCUMENT

climatology at local scale. Prior to that request, this study developed a conceptual framework to cater the needs. By using the digital spatial data, acquired from site measurement and remote sensing, the proposed framework applied a multiple criteria analysis to perform the tasks of site selection. With the advancement of high resolution remotely sensed data, site determination can be conducted as in Malaysia; accommodating a new, fast, and effective satellite communication. The output of this study is one of the pioneer contributions to create a high tech-society.

BOOK CHAPTER PUBLISH BY SPRINGER

Performance and Evaluation of Eight Cloud Models on Earth - Space Path for a Tropical Station

May 3, 2017 15:00

Temidayo Omotosho (Covenant University & University Kebangsaan Malaysia, Nigeria); Mustapha Adewusi (Lagos State University, Nigeria); Akinyemi Lola (Covenant University, Nigeria); Oluwafumilayo Ometan (Lagos State University, Nigeria); Sayo A Akinwumi (Covenant University, Nigeria); Williams Ayara (Covenant University, Nigeria)

Abstract: This is a review of eight cloud models and statistical analysis of radiosonde data and cloud cover data to obtain attenuation distributions and cloud cover statistics for a tropical location, Ota (6.7oN, 3.23oE) at computed elevation angle of 56.180 to a Astra 2B satellite located at 31.50E. Cloud models are mathematical algorithms scientifically designed to predict cloud attenuation impact on propagating electromagnetic signals in the troposphere, given each model's required parameters data set such as temperature, pressure, cloud height, cloud occurrence and cloud liquid water content. The station's cloud cover statistics such as, average cloud amount, cloud base height, and frequency of occurrence were computed from extracted cloud data to obtain their monthly and seasonal variations. The results show that minimum attenuation values were predicted by the Gun and East and the ITU-R models, while Liebe and Slobin models predicted consistently maximum values of attenuation for all the cloud models tested. Cloud attenuation statistics computed for each of the models show that at 0.01% exceedance probability, the averages of the predicted cloud attenuation for uplink and downlink at Ota, ranges between 0.45 dB and 0.44 dB for Ku, 1.85 dB and 0.75 dB for Ka, 3.50 dB and 2.50 dB for V bands; also at 0.1% the averages are between 0.30 dB and 0.27 dB, 0.95 dB and 0.47dB, 2.45 dB and 1.51 dB at Ku, ka and V bands for uplink and downlink respectively.

Bio: I received Masters of Technology and PhD in Physics (Satellite to ground Radiowave Propagation) in January 2004 and June 2008 at the Federal University of Technology Akure and Covenant University Nigeria respectively. Bachelor of Technology (Physics Electronics) in December 1997. I have wealth of experience in using in-situ meteorological data and Satellite remotely sensed data. My works have been published in high impact Journals and presented in many conferences. I have a very good knowledge of Computer programming and visualization of large scientific data, assimilation and analysis. I am a member of IEEE, American Geophysical Union, Nigeria institute of Physics, African Geophysical Society and Nigeria Union of Radio Science. I have supervised Four Masters students which have graduated and three have proceeded for PhD degree under my supervision. I am currently an Associate Professor in the Department of Physics Covenant University Ota Ogun State Nigeria

Microstrip Feed Slotted Ground Antenna Having Parasitic Element for UWB Applications

May 3, 2017 15:00

Ali Bostani (American University of the Middle East, Kuwait); Girish Awadhawal (Institute of Technology, India)

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Abstract: In this paper, Micro-strip feed slotted ground antenna for an Ultra Wide Band (UWB) antenna is proposed. The frequency domain analysis of the proposed antenna has been done by optimizing the feed line, slotted ground and rectangular shape center element on ground side to show its capability as an operative element to be used for UWB purposes. The return loss (S11) is less than -10 dB along the operational bandwidth of 2.58 GHz to 10.74 GHz which is nearly 7 GHz over the UWB band allocated by FCC. In this paper, the simulated return loss and radiation pattern are presented.



Bee-Comb Shape Left Handed Metamaterial for Terahertz Application

May 3, 2017 15:00

Md. Mehedi Hasan (Universiti Kebangsaan Malaysia, Malaysia); Mohammad Rashed Iqbal Faruque (Senior Lecturer, Malaysia); Mohammad Tariqul Islam (Universiti Kebangsaan Malaysia & Universiti Kebangsaan Malaysia, Malaysia)

Abstract: A bee-comb shaped left handed metamaterial for terahertz frequency applications has been presented in this paper. The proposed metamaterial is designed on the epoxy resin composite with woven glass fiber by a complex structure is driven by the average connectivity of the metallic strips formed like bee-comb shape. Finite integration technique based electromagnetic simulator Computer Simulation Technology Microwave Studio has been utilized to design, simulation purpose of the proposed de-sign. The designed structure exhibits resonance at of 36.82 THz, 57.71 THz and 74.23 THz as well as the left handed characteristics at 81.79 THz, whereas the electromag-netic waves are propagating at the z-direction. Finally, the structure also analysed by propagating the electromagnetic waves along the x- and y-directions through the met-amaterial structure for observing the rotation effects of direction of wave propagation on the reflection and transmission coefficient.

Impacts of ionospheric electric fields on the GPS tropospheric delays during geomagnetic storms in Antarctica

May 4, 2017 10:30

Wayan Suparta (Universiti Kebangsaan Malaysia, Malaysia)

Abstract: This paper aimed to overview the interaction of the thunderstorm with the ionospheric electric fields during major geomagnetic storms in Antarctica through the GPS tropospheric delays. For the purpose of study, geomagnetic activity and electric fields data for the period from 13 to 21 March 2015 representing the St. Patrick's Day storm is analyzed. To strengthen the analysis, data for the period of 27 October to 1st November 2003 representing for the Halloween storm is also compared. Our analysis showed that both geomagnetic storms were severe (Ap \geq 100 nT), where the intensity of Halloween storm is double compared to St. Patrick's Day storm. For the ionospheric electric field, the peaks were dropped to -1.63 mV/m and -2.564 mV/m for St. Patrick and Halloween storms, respectively. At this time, the interplanetary magnetic field Bz component was significantly dropped to -17.31 nT with Ap > 150 nT (17 March 2015 at 19:20 UT) and -26.51 nT with Ap = 300 nT (29 October 2003 at 19:40 UT). For both geomagnetic storms, the electric field was correlated well with the ionospheric activity where tropospheric delays show a different characteristic.

Bio: Presently, I am an Associate Professor at the Space Science Centre (ANGKASA) (formerly Institute of Space Science (ANGKASA)) of The National University of Malaysia. My current research interest includes satellite remote sensing (GPS) and meteorology application, solar terrestrial physics, space meteorology and environment, modeling of satellite disturbances, aerospace sciences and near field communication (NFC).



Ionospheric TEC response to the partial solar eclipse over the Malaysian Region

May 4, 2017 10:30

Rohaida Mat Akir (Universiti Kebangsaan Malaysia, Malaysia); Mardina Abdullah (Universiti Kebangsaan Malaysia, Malaysia); Kalaivani Chellappan (Universiti Kebangsaan Malaysia & Faculty of Engineering & Built Environment, Malaysia); Siti Aminah Bahari (Universiti Kebangsaan Malaysia, Malaysia)

Abstract: This paper presents the study of ionospheric behavior during the partial solar eclipse on the 9th March 2016 in the Malaysian region. The partial solar eclipse event occurred during quiet solar and magnetic activities with maximum Kp index and geomagnetic Dst indices are 2 and -23 nT. Ionospheric total electron content (TEC) was obtained from three GPS Ionospheric Scintillation and TEC Monitor (GISTM) installed at the Langkawi National Observatory, Langkawi, LGKW ([06] ^o [19] ^' N, [99] ^o [51] ^' E), Universiti Kebangsaan Malaysia, UKM ([02] ^o 55'N, [101] ^o 46'E) and Universiti Malaysia Sarawak, UNIMAS ([01] ^o 28'N, [110] ^o 25'E) stations. The selection stations has coverage between 68% until 87% at Peninsular Malaysia and Sarawak. This study compared the VTEC level during the partial solar eclipse period and the VTEC on the day before, the day after and the mean of quiet days VTEC. Results at these three stations show clear occurrence of VTEC depletion in the range between 6-19 % during the partial solar eclipse. From the findings, it shows that depletion of VTEC during partial eclipse due to the reduction of ionization.

Parametric Studies of ANFIS families capability for thunderstorm prediction

May 4, 2017 10:30

Wayan Suparta (Universiti Kebangsaan Malaysia, Malaysia); Wahyu Sasongko Putro (Space Science Center (ANGKASA), Institute Of Climate Change (IPI) & The National University Of Malaysia, Malaysia)

Abstract: A thunderstorm is an unpredicted natural hazard and it will intimidate the human life. This paper uses six parameters such as pressure, temperature, relative humidity, cloud, rainfall and precipitable water vapor to detect thunderstorm activity. To realize the thunderstorm prediction system, we develop thunderstorm prediction model based on Adaptive Neuro-fuzzy Inference System (ANFIS) family (ANFIS FCM, ANFIS FSC, and ANFIS Human Expert). The three model of ANFIS families will be assessed to obtain the capability of thunderstorm prediction model. In this work, input and output variables were taken from Tawau meteorology station. The result shows thunderstorm prediction model based ANFIS Human Expert have a good result with estimation error prediction < 2% with root mean square error (RMSE) and percent error (PE) values of 3.028% and 23.545%, respectively as compared to ANFIS FCM and ANFIS FSC.

Comparison of measurement and predicted HF operating frequencies during low solar activity

May 4, 2017 10:30

Rafidah Abd Malik (Universiti Kebangsaan Malaysia (UKM) & Science & Technology Research Institute for Defence (STRIDE), Malaysia); Mardina Abdullah (Universiti Kebangsaan Malaysia, Malaysia); Sabirin Abdullah (Universiti Kebangsaan Malaysia (UKM), Malaysia); Mariyam Jamilah Homam (Universiti Tun Hussein Onn Malaysia, Malaysia)

Abstract: There is a need to find reliable and accurate HF operating frequencies because of the uncertainty and variability of the ionospheric region. Therefore, the aim of this study was to observe and analyze the HF operating frequencies in Peninsular Malaysia. ASAPS and ICEPAC prediction were used to compare the performances of HF operating frequency. This study was carried out in Peninsular Malaysia which is located in the equatorial region and at the beginning of solar cycle 24, namely from April to December of 2009. The HF operating frequencies involved maximum usable frequency (MUF) and operating working frequency (OWF), and were based on hourly monthly median values. Results of the comparison carried out show that MUF and OWF of ASAPS slightly overestimated MUF and OWF of measurement by about 11% and 12% respectively. In contrast, MUF ICEPAC highly underestimated MUF measurement by about 39% while OWF ICEPAC slightly overestimated MUF measurement by about 16%. This indicates that the MUF and OWF measurements of HF operating frequencies in the Malaysian region are aligned with MUF and OWF, especially OWF of the prediction software and can be predicted. This study can be used to provide data and assist HF researchers in modeling MUF models for predicting HF operating frequencies in the Malaysian region.

Bio: Currently PhD student at ANGKASA, UKM.

Geomagnetic Storms Effect on Fluctuations of Total Electron Content at an Equatorial Station

May 4, 2017 14:45

Siti Zainab (University Tun Hussein Onn Malaysia, Malaysia); Mariyam Jamilah Homam (Universiti Tun Hussein Onn Malaysia, Malaysia)

Abstract: This paper aims to investigate the effect of geomagnetic storms (categorized as intense and moderate) on the fluctuations of Total Electron Content (TEC) in the ionosphere. The TEC obtained from ground-based GPS receivers are used for relate their response to geomagnetic storm activity. The TEC data from an equatorial station, Libreville (NKLG) station (0.4162° N, 9.4673° E) for the year of 2011 and 2013 were processed. The fluctuations of TEC during intense and moderate storms period has depicted as an ionospheric storm effect. The wave-like perturbations of TEC during storms indicate the existence of plasma uplift due to eastward penetration electric fields at the equatorial station.

Characterization of lightning energy during 2014-2015 summer and winter over the Antarctic Peninsula

May 4, 2017 14:45

Wayan Suparta (Universiti Kebangsaan Malaysia, Malaysia); Siti Khalijah Zainudin (Universiti Kebangsaan Malaysia, Malaysia)

Abstract: The aimed of this paper is to characterize the lightning energy over the Antarctic Peninsula through the distribution of PWV and precipitation rate and the event that occur. For the purpose of the study, the calculated PWV by using the surface meteorological data (pressure, temperature, and relative humidity) for the period of 2 years during summer and winter is analyzed. To strengthen the analysis, data for the precipitation rate and event during the day with the most lightning strike occurrence in summer and winter is also compared. The analysis showed that lightning strike mostly occurred on winter morning compared to summer with an average of the energy of 8,120.46 J. The PWV distribution on the map show that they will have a higher value at the denser location of the lightning strike. When the lightning strike occurred, there are increases in precipitation rate a few hours before and after with an events of snow, rain and fog occurred.

Manifestation of SVM-based Rectified Linear Unit (ReLU) Kernel Function in Landslide Modelling

May 4, 2017 14:45

Biswajeet Pradhan (University Putra Malaysia (UPM) & Department of Civil Engineering, Malaysia); Maher Ibrahim Sameen (University Putra Malaysia, Malaysia)

Abstract: Support vector machines (SVM) are the most popular machine learning methods used to model the landslide phenomena. To model the complex nature of landslides, the SVM model parameters (kernel function, penalty parameter) should be fine-tuned to achieve the best possible accuracy. The main objective of this paper is to evaluate the commonly used rectified linear unit (ReLU) activation function in deep learning for SVM model as a kernel function. A case study of Cameron Highlands located in the Peninsular Malaysia was selected and dataset was acquired through airborne LiDAR system, topographical databases, and SPOT satellite images. The SVM modelling with ReLU kernel was implemented in Matlab environment. Overall, 11 landslide factors and 81 landslide locations (inventory map) were used. Experimental results showed that the ReLU kernel function could achieve higher accuracy (0.81) than other kernels when using less number of landslide factors. It was found that ReLU kernel function is more accurate (0.73) than RBF kernel (0.71) when using very limited factors (e.g. altitude, slope, curvature). The kernel ReLU could improve the performance of land-slide susceptibility modelling with SVM while reducing the need of using large datasets.

Bio: Biswajeet Pradhan received the B.Sc. degree in Geology honours from Berhampur University, Orissa, and the M.Sc. in applied geology from Indian Institute of Technology (IIT), Bombay, and the M.Tech. in civil engineering from Indian Institute of Technology (IIT), Kanpur, and the Ph.D. in gis and geomatic engineering from University Putra Malaysia. He is a recipient of German Deutscher Akademischer Austausch Dienst (DAAD) and Saxony Scholarship holder from 1999 to 2002. He has more than 15 years of teaching, research and industrial experience and has

published over 90 research articles in referred technical journals and books. He specializes in remote sensing, gis application and soft computing techniques in natural hazard and environmental problems.

Time derivative of horizontal geomagnetic field of low latitude MAGDAS Langkawi station for geomagnetically induced current estimation

May 4, 2017 14:45

Farah Adilah Mohd. Kasran (Universiti Teknologi Mara, Malaysia); Mohamad Huzaimy Jusoh (Universiti Teknologi Mara Malaysia, Malaysia); Akimasa Yoshikawa (Kyushu University, Japan); Zahira Mohd Radzi (ANGKASA, Malaysia)

Abstract: Time derivative of horizontal magnetic field component (dH/dt) is directly related to geomagnetically induce current (GIC). From Faraday's law of induction current, the changes of geomagnetic field due to space weather perturbation can produce an electrical current that flow on the Earth's surface and this process is so called GIC. Historically, many GIC activities have been reported in high latitude region due to most frequent and most intense geomagnetic activity observed in this area. However, during strong sudden increased (SI) event, the impact of geomagnetic disturbance may extend to low latitude region, thus leading to GIC activity. Long term analysis of ground magnetic changes, dH/dt with exceeding 30 nT/min of MAGDAS Langkawi station during ascending and peak Solar Cycle 24 (SC 24) is conducted to select the significant SI event. The analysis on Solar Wind Speed Vx component, Interplanetary Magnetic Field, IMF Bz component and magnetic indices (AU, AL and DST) are then extent to reveal the behavior of each parameters during the events. We found that during SI events of this period study, the average of time derivative of H-component magnetic field, dH/dt is 37.8 nT/min. Three SI events have been analyzed and it shows the characteristic of solar wind speed and interplanetary magnetic field during the storm can influence the local geomagnetic disturbance strength. Furthermore, the signature of magnetic disturbance process and amplitude of dH/ dt in this station is also strongly dependent on which Earth's side faces the SI event. The findings of the study exhibit that the SI event during noon side with IMF Bz component points southward will induce stronger ground magnetic disturbance and larger amplitude of dH/dt even though smaller increase of solar wind speed Vx recorded compared to any SI events occurred on night side with northward pointing of IMF Bz. In overall, the analysis on dH/dt of this study shows the possibility of GIC occurrence in Malaysia and further investigation and experimentation on GIC activity is strongly recommended.

The Measurement of Solar Ultraviolet Ambient Dose using EBT3 Film

May 4, 2017 14:45

Ahmad Fairuz Omar (Universiti Sains Malaysia, Malaysia); Ummi Shuhada Osman (Universiti Sains Malaysia, Malaysia); Intan Nadia Mohammad Saleh (School of Physics, Universiti Sains Malaysia, Malaysia)

Abstract: Gafchromic EBT3 films were analyzed for its response towards ultraviolet UV-A and UV-B dose from solar radiation. This work was done to investigate the ambient daytime UV dose through the color changes of EBT3 films that was quantified using visible absorbance spectroscopy technique. The experiment was conducted by exposing the EBT3 films underneath ambient solar radiation at several randomly selected places around Universiti Sains Malaysia. The experiment was conducted in three different time of the day (i.e. morning, noon and afternoon) and in two consecutive day, named as Day 1 and Day 2. The combination results from Day 1 was later combined to form calibration dataset in generating UV dose (mJ/cm2) measurement algorithms while dataset from Day 2 was combined to form prediction dataset. From the experiment, the most important single wavelength in generating highly accurate calibration algorithm was 650 nm. While the calibration algorithm using five wavelengths was developed using wavelengths of 536, 547, 550, 650 and 693 nm with coefficient of determination, R2 recorded at 94.12% with Root Mean Square Error of Prediction, RMSEP of 685.85 mJ/cm2. All the empirical results presented in this paper showed that EBT3 film capable of giving a good response in quantifying UV dose.

A brief review:response of ionosphere on solar activity

May 4, 2017 14:45

Siti Aminah Bahari (Universiti Kebangsaan Malaysia, Malaysia); Mardina Abdullah (Universiti Kebangsaan Malaysia, Malaysia)

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Abstract: The variability of solar activity plays an important roles in controlling the chemical reactions and physical processes in the ionosphere. In order to improve our understanding on the characteristic of ionosphere over Malaysia, study on solar activity effects on ionosphere is needed. This paper focuses on the variations of ionosphere on solar activity. Variations of ionosphere are divided into 1) critical frequency profile, 2) maximum usable frequency and minimum frequency, 3) variations of TEC on solar activity, 4) ionospheric delay, 5) scintillation and 6) equatorial plasma bubble. The above-mentioned studies provide new clues for comprehensive explaining basic processes in the ionosphere and improving the prediction capability of ionospheric model and related applications.

ABSTRACT - JASTP

Unveiling the Hidden Supermassive Black Hole in NGC 1448 with NuSTAR

Adlyka Annuar (Durham University, United Kingdom)

Abstract: At a distance of D = 11.5 Mpc, NGC 1448 is one of the nearest galaxies to our own. Yet, the active galactic nucleus (AGN) it hosts was only recently discovered in 2009 through the detection of the high ionization [NeV]\24.32\u00c0m emission line. In this talk, I will present the first multi-wavelength view of the AGN across three wavebands: mid-infrared (MIR) continuum, optical, and X-rays. We observed the source with the Nuclear Spectroscopic Telescope Array (NuSTAR), and combined this data with archival Chandra data to perform broadband Xray spectral fitting (~0.5-40 keV) of the AGN for the first time. The column density measured from our X-ray spectral analysis, N H > 2.5×10^{24} cm⁻², indicates that the nuclear source is buried under a Compton-thick (CT) column of gas across our line-of-sight. This hinders our direct view towards the AGN in X-rays. The 2-10 keV intrinsic luminosity inferred from the best-fitting torus models is $L_2-10 = (3.5-7.6) \times 10^{40}$ erg/s, making NGC 1448 one of the faintest CTAGNs known to date. In addition to the NuSTAR observation, we also observed the nuclear source at high spatial resolution MIR 12µm continuum using Gemini/T-ReCS which reveals a compact nucleus at the centre of the galaxy. Optical spectroscopy performed for the nucleus using the European Southern Observatory New Technology Telescope re-classified the optical nuclear spectrum as a Seyfert on the basis of the Baldwin-Philips-Terlevich diagnostic diagrams. Our data provide the first identifications of the AGN in NGC 1448 at X-rays, MIR continuum and optical wavelengths. The absorption-corrected 2-10 keV luminosity measured from our X-ray spectral analysis agrees with that predicted from the optical $[OIII]\lambda$ 5007A emission line and the MIR 12µm continuum, further supporting the CT nature of the AGN.

Solar Eruptions Initiated in Sigmoidal Active Regions

Antonia Savcheva (Harvard-Smithsonian Center for Astrophysics, USA)

Abstract: Coronal sigmoids, generally observed in X-rays and EUV, are S-shaped loops in the cores of active regions that have been shown to possess high probability for eruption. They present a direct evidence of the existence of flux ropes in the corona prior to the impulsive phase of eruptions. In order to gain insight into their eruptive behavior and how they get destabilized we need to know their 3D magnetic field structure. First, we review some recent observations and modeling, including the latest state-of-the art data-constrained and data-driven MHD simulations, of sigmoidal active regions. As the primary hosts of solar eruptions, they can also be used as useful laboratories for studying these phenomena. Then, we concentrate on the analysis of observations and highly data-constrained nonlinear force-free field (NLFFF) models over the lifetime of several sigmoidal active regions, where we have captured their magnetic field structure around the times of major flares. We present the topology analysis of a couple of sigmoidal regions pointing us to the probable sites of reconnection. A scenario for eruption is put forward by this analysis. We demonstrate the use of this topology analysis to reconcile the observed eruption features with the standard 3D flare model. Finally, we show a glimpse of how such a NLFFF model of an erupting region can be used to initiate a CME in a global data-constrained MHD simulation in an unprecedented realistic manner. Such simulations can show the effects of solar transients on the near-Earth environment and solar system space weather.

Low Cost Solar Flare Detector for Space and Earth's Electromagnetism Observation

Nur Zakaria (Universiti Teknologi MARA (UiTM) Shah Alam, Malaysia); Mohamad Huzaimy Jusoh (Universiti Teknologi Mara Malaysia, Malaysia); Afifah Taat (Universiti Teknologi MARA, Malaysia)

Abstract: Solar flare is one of the important parameter in space weather event. It was initiated by huge blast in the Sun's atmosphere and produced extreme burst of radiation which caused satellite drag, power grid shutdown and effects wide range of radio communication services. For the next five years, the solar activities are expected in producing numerous solar flare and coronal mass ejections, it is hypothetically can destruct and render all electrical and electronic appliances. Thus, to contrive the challenge, research on the development of low cost solar flare monitoring for space weather observation is carried out to study characterization of solar flare so that it can be an alarm system to protect electronics and technological system. Basically, this system comprises of magnetic loop antenna acts as a receiver, preamplifier to amplify the very low frequency signal and data acquisition system as a data logger for the whole system. The receiver antenna was installed at Universiti Pendidikan Sultan Idris, Kampus Sultan Azlan Shah, Tg Malim, Perak (Lat: 3.71' and Long: 101.53'). It received two frequencies which are from North West Cape Station, Australia (19.8kHz) and South Vijayanarayanam Station, India (19.2KhZ). The data can be real time monitored at Space and Earth's Electromagnetism official website (https://fke.uitm.edu.my/see-uitm/). The significance values of this research are the system is low cost compared to existing equipment that are by using Geostationary Operational Environment Satellite (GOES) and GPS system. Besides, it is portable and easy maintenance. The result of this system showed it detect the solar flare event on 29th November 2016 with the class C7.5.

GPS phase fluctuations over Tromsø and Ny-Ålesund in the low solar activity

Wei-Sheng Chen and Chien-Chih Lee (Chien Hsin University of Science and Technology, Taiwan); Fang-Dar Chu (Telecommunication Laboratories, Chunghwa Telecom Co., Ltd., Taiwan); Teh Wai Leong (Universiti Kebangsaan Malaysia, Malaysia)

Abstract: This study used GPS phase fluctuations to investigate irregularities at Tromsø and Ny-Ålesund in Norway from 2007 to 2008. Tromsø locates at auroral latitudes and is inside the auroral oval during nighttime; Ny-Ålesund is in the polar cap; the years 2007 and 2008 belong to the low solar activity period. Therefore, this study showed irregularity behavior in the auroral oval and the polar cap when the influence of solar activity is minimal. The phasefluctuation index Fp was adopted to characterize GPS phase fluctuations, which relate to the irregularities with size from few to tens kilometers. The investigations include the climatology of Fp and the comparisons between Fp and magnetic indices Kp and AE. The first part shows the occurrence and strength of irregularities, and the second part shows the relations between irregularities and the magnetic variation. Finally, the difference of irregularities in the two regions were detailed examined, and the variations of GPS phase fluctuations and scintillations were also discussed.

Measurement of lonosphere over the Western Pacific Ocean for civil aviation

Mamoru Ishii and Hidekatsu Jin (National Institute of Information and Communications Technology, Japan); Tatsuhiro Yokoyama (National Institute of Information and Communications Technology & Space Weather and Environment Informatics Laboratory, Japan); Takuya Tsugawa (National Institute of Information and Communications Technology, Japan); Michi Nishioka (National Institute of Information and Communications Technology & Space Weather and Environment Informatics Laboratory, Japan); Takashi Maruyama (National Institute of Information and Communications Technology, Japan)

Abstract: Recently it becomes more important to measure the ionosphere over the ocean. Most of the ionospheric area over the ocean are difficult to measure directly for a long time and it prevents the scientists from establishing precise global model of ionosphere. Now many of social requirements, e.g., international aviation glows to know the information over the ocean. National Institute of Information and Communications Technology (NICT) has a long history of operational ionospheric observation with ionosondes since IGY 1957. On the beginning, we had four domestic observatories, Wakkanai, Akita, Kokubunji and Yamagawa. After that Akita was closed and Okinawa joined, we operate these four observatories continuously. In addition, Syowa station in Antarctica has been observing ionosphere by NICT since IGY, too. In addition for research base we have been developing ionospheric observing network in Southeast Asia named SEALION. And as the World Data Center for ionosphere, we exchange and archive a huge number of ionospheric data obtained by foreign institutes. On the base of these experience we suggest four method of ionospheric observation over the ocean.

Dependence of Skin Depth on Ultra-Low Frequency (ULF) Wave and Underground Conductivity in the Lithosphere

Khairunnisa Nabilah Juhari (Universiti Teknologi MARA, Malaysia); Mohamad Huzaimy Jusoh (Universiti Teknologi MARA, Malaysia); Farah Adilah Mohd. Kasran (Universiti Teknologi Mara, Malaysia); Siti Nurbaiti Ibrahim (Universiti Teknologi MARA, Malaysia); Mohamad Fahmi Hussin (UiTM, Malaysia)

Abstract: It has been studied that the variability of the ionospheric current arises from the dynamical change of exogenous parameters associated with solar activities is one of the plausible causes in the generation of underground induced current that leads to the fluctuation of underground conductivity. The changing of underground conductivity results to the amplitude variations of reflected electromagnetic waves which can be observed from the ground-based magnetometer data. The presence work has been made to examine the localized skin depth of the Ultra-low frequency (ULF) wave extracted from the Magnetic Data Acquisition System (MAGDAS) magnetometer with respect to the underground conductivity variations. To comprehend the investigation of this solar-terrestrial coupling, this paper attempts to focus on the localized skin depth variations by analyzing it with external parameters of solar wind (speed, dynamic pressure, IMF Bz and input energy) and equatorial ionosphere. To demonstrate the potential of this research, a continuous measurement of geomagnetic and underground conductivity were conducted simultaneously at MAGDAS Langkawi (LKW) Station. In the analysis, the variations of skin depth are discussed based on the dependency of ULF wave and underground conductivity. This research will serve as a base for future studies in enhancing our understanding on the solar-terrestrial relationship.

EEJ variation of geomagnetic disturbance during northward interplanetary

Siti Nurbaiti Ibrahim (Universiti Teknologi MARA, Malaysia); Mohamad Huzaimy Jusoh (Universiti Teknologi Mara Malaysia, Malaysia); Ahmad Asari Sulaiman (Universiti Teknologi MARA, Malaysia); Farah Adilah Mohd. Kasran (Universiti Teknologi Mara, Malaysia); M Abbas (Kebbi State University of Science and Technology, Malaysia); Mardina Abdullah (Universiti Kebangsaan Malaysia, Malaysia); Akimasa Yoshikawa (Kyushu University, Japan) Abstract: An investigation of the equatorial electrojet (EEJ) current response in six magnetic equatorial observatories was conducted during a sudden impulses on 23rd December 2014 resulting the enhancement of solar wind dynamic pressure, Pdyn during northward of interplanetary magnetic field, IMF Bz. The geomagnetic field data were extracted from six equatorial ground-based magnetometer observatories that includes International Real-time Magnetic Observatory Network (INTERMAGNET) stations which are ; Kourou (KOU), Mbour (MBO), Addis Ababa (AAE), Dalat (DLT) and Guam (GUA) and also Magnetic Data Acquisition System (MAGDAS) at Langkawi(LKW) station. The variation of dip inclination, I was quantified to determine the centralization of EEJ current near to dip equator during onset of event and appears close to the dip equator. Hourly mean of horizontal (H)-element of geomagnetic field was obtained to distinguished the effect of EEJ intensity during the event and quiet period. The enhancement of variation of EEJ intensity was found mainly at daytime and peak at local noon of station. The correlation of EEJ current and solar wind parameters were analyzed to identify their possible relationship. The results shows the solar wind dynamic pressure has most significant contribution to the EEJ variation. The findings of this study suggest that a few possible causative factors that influence the response of EEJ current: 1) solar wind dynamic pressure, 2) the magnetospheric current 3) the local time dependence 4) the latitude of ground based station near to dip equator, 5) the electrodynamic process.

Coastal vulnerability assessment of Pahang coast due to sea level rise: a preliminary study

Fazly Amri Mohd (The National University of Malaysia, Malaysia); Khairul Nizam Abdul Maulud (University of National Malaysia, Malaysia); Othman Karim (Universiti Kebangsaan Malaysia, Malaysia); Rawshan Begum (Institute of Climate Change, Malaysia)

Abstract: Pahang has a lot of beautiful beaches with attractive landscape and scenery, which it's is one of the most important assets supporting the economic activities of this state. As with many coastal regions, the population and assets exposed to coastal risks as well as human pressures on coastal ecosystems will rise significantly in the coming decades due to population growth, economic development and urbanization. Sea level rise (SLR) is recognised as one of the global warming effects. This events brought by a rapidly changing climate added to coastal zone development potentially present negative feedback that might impact the critical infrastructures such as transportation, jetty and local community. Therefore there is a need to develop methods that assess coastal vulnerability, and determine how best to managed this risk. The main objective of this study is to propose physical variables and develop a coastal vulnerability index (CVI) for Cherating to Pekan of Pahang coast using seven (7) physical variables: geomorphology, coastal slope, shoreline change rate, mean significant wave height, mean tidal range, relative sea level rate and land use. The CVI was calculated by integrating the differentially weighted rank values of the 7 variables based on which 5

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classes ranging from very low, low, medium, high and very high. As a result, the information presented from study provides input into a decision support tool that will enable the effective and platform for coastal disaster management for future development.

Meteor head and terminal flare echoes observed with the Gadanki MST radar

Kammadhanam Chenna Reddy (Osmania University, India)

Abstract: A routine meteor observation with Gadanki MST radar has detected variety of echoes that includes head echoes, specular and non-specular echoes. Sometimes, but not always head echoes are followed an abrupt increase in signal strength at the end of the trial known as terminal flare event, a feature that mostly observed with high power large aperture radar systems. In this study we report some examples of head echoes and terminal flare events followed by head echo observed with Gadanki MST radar. Study of these echoes provides valuable insights into the role of diffusion and plasma instabilities in the formation and evolution of meteor trails. From the observations, it has been noticed that the head echoes at higher altitude are generating non-specular trail echoes (or RSTE) whereas at lower altitudes causing for head echo terminal flaring, which associated with meteoroid fragmentation. Meteoroid fragmentation is commonly observed, but a terminal flaring—the meteor signal disappears in 1 ms-events are rare feature observed with the Gadanki MST radar. In the present study an explanation is offered for the observed features based on the quasi-continuous meteoroid fragmentation mechanism.

Simulation of three dimensional spectral solar irradiance on digital elevation model

Eng Choon Yeap and Lim San (Universiti Sains Malaysia, Malaysia)

Abstract: Remote sensing image often suffer from inhomogeneous solar illumination due to atmospheric and topographic effect. This effect was noticeable especially in mountainous area. It was caused by the difference of solar incident angle of the terrain where slopes facing toward the sun tend to have higher energy than slope that facing away from the sun. Reducing these effects may improve the quality of spectral information and accuracy of unsupervised classification. Simulation of the solar illumination uses local atmospheric parameter, radiative transfer model and a digital elevation model. Local atmospheric data were retrieved from Atmospheric Infrared Sounder to use in radiative transfer model to generate the three dimensional spectral solar irradiance of any instant of time. The result from this study was tested with the solar flux data from Aerosol Robotic Network which return an overall correlation of 97% with 4.8% root mean square error for zenith angle below 60 degree.

Effect of simulated microgravity on rice (MR 219) growth and yield using a 2-D clinostat

Teoh Chin Chuang (Malaysian Agricultural Research and Development Institute, Malaysia); Ong Keat Khim, Nur Athirah and Ummul Abdul Rauf (Universiti Pertahanan Nasional Malaysia, Malaysia); Norliza Abu Bakar (Malaysian Agricultural Research and Development Institute, Malaysia); Dato' Wan Wan Yunus (Universiti Pertahanan Nasional Malaysia, Malaysia)

Abstract: Rice (Oryza sativa L.) is a popular crop as it is the staple food for many Asian countries. The demand for rice increases due to the growing of Asian population. However, the production of high quality rice seeds is still insufficient. Therefore, this study was conducted to establish a simple and cost effective technique to enhance the quality of the rice seed MR 219 by using a 2-D clinostat and to determine the effects of simulated microgravity on the growth and yield of the rice seeds. The experiments were performed at different rotation speeds (2 rpm and 10 rpm) for 10 days at room temperature. The rice growth and yield parameters were measured every 2 weeks and at harvest time (day 110), respectively. The data were analysed using the MINITAB software and the mean values were compared using Student's t test at 0.10 significance level. The results revealed that most of the rice growth and yield parameters were found fall into the treatments. The significant differences in the number of tiller (40/plant) and chlorophyll content (36.9552 SPAD value) were identified in 2 rpm clinorotated rice seeds, whereas chlorophyll content (40.1384 SPAD value), gross weight of grain yield with chaff and panicles (65.875 g) and total grain weight per plant (46.750 g) were found in 10 rpm clinorotated rice seeds. It can be concluded that simulated microgravity using a 2-D clinostat affected several rice (MR219) growth and yield parameters significantly.

Depiction and analysis of a modified H-shaped double negative meta atom for satellite communication

Md. Jubaer Alam (UKM & UKM, Malaysia)

Abstract: A modified H-shaped metamaterial is imparted in this paper that has a multiple band coverage for reflection and transmission coefficient. Moreover, the proposed structure also exhibits triple band coverage for the permittivity and permeability. Two split ring resonators (SRR) are connected with the substantial H-shaped structure. The 11×11 mm2 structure has been printed on FR-4 and a correlation is made between the basic unit cell and array structures. A comparison is made among 1×1 , 2×2 and 4×4 array structures with 1×1 , 2×2 and 4×4 -unit cell configurations to validate the performance of the proposed metamaterial. A great transmission coefficient of 13GHz with a 500Mhz band gap at the middle is demonstrated for all of these configurations. The effective parameters of the resonators cover C, X and Ku-band independently with double negative phenomena at X and Ku-band with a frequency range of about 2.5GHz each. The reflection and transmission coefficients of the unit cell are obtained by CST microwave studio. Having an auspicious design and wide range double negative characteristic, this structure can be applicable for satellite communication.

The occurrence of individual structure of equatorial plasma bubble in Southeast Asian sector

Suhaila M Buhari (Universiti Teknologi Malaysia, Malaysia); Mardina Abdullah (Universiti Kebangsaan Malaysia, Malaysia)

Abstract: Equatorial plasma bubble (EPB) is a 3D structure of ionospheric irregularity that cause rapid fluctuations in the amplitude and phase of radio signals and crucial to communication and navigation systems. The EPB normally occurs successively where one structure rising after another. Therefore, the wave-like structure such as large scale wave structure (LSWS) was suggested as seeding mechanism that is responsible for the development of EPB. The presence of LSWS can be derived from GNU Radio Beacon Receiver (GRBR) that installed in Georgetown and Kuala Lumpur since 2012. However, the development of EPB was not always preceded by the LSWS. The time-continuous observation of EPB using high-density GPS receivers in Southeast Asia shows the EPB occurs individually. Properties such as zonal wavelength, onset time, duration, location, and speed of the EPB and LSWS will be examined. An actual perspective of the formation of LSWS that is responsible for the development of EPB will be revealed.

Utilization of Vegetation Indices in Classifying Hornet Composition of Nagoya City

Muna Maryam (Universiti Teknologi Malaysia, Malaysia); Mazlan Hashim (Prof, Malaysia); Tetsuro Hosaka and Shinya Numata (Tokyo Metropolitan University, Japan)

Abstract: Urban green space is undoubtly certified as important cities element that serves the residence livability as well as esthetic aspect. Green elements also attracted various wildlife in accommodating the spaces due to the sources of habitat and preys. However, limited studies had discussed empirically the impact of green spaces towards their presence in urban environment. Therefore, this study focused on investigating the impact of green spaces using Normalized Difference Vegetation Index (NDVI) and Enhanced Vegetation Index (EVI) from Landsat on the composition of hornet in Nagoya city, Japan. Using ten years observation, we showed that greenness level significantly correlated with the hornet abundance. The result of generalized linear mixed model (GLMM) using the location as random effect, greener environment was found related with the largest hornet species, Vespa Mandarinia. NDVI and EVI were indicated as best factor in describing hornet composition and abundance respectively within 1 km radius. While our results highlight the positive aspect of green environment towards wildlife livability, it also reflects our role in sustaining the future urban ecosystem through effective green infrastructure planning.

Analysis of Suborbital Flight Operation Using PESTLE

Abdul Raof Zahari and Fairuz Romli (Universiti Putra Malaysia, Malaysia)

Abstract: Suborbital flight has progressively emerged as the potential future transport trend, whether for space tourism or other applications. While several design concepts have been explored thus far for the suborbital flight operation, one of the main lingering concerns is actually the destination of the flight. The altitude of 100 km, which is the commonly chosen destination ceiling of suborbital flight, provides imaginary separation between orbit and suborbit, or in other words, between air and space. The quest for this separation sparks intense debates not only in the scientific communities but also in the political circles and legal fraternities. Owing to this fact, it is only appropriate to analyse the suborbital flight operation by using the analytical tool of Political, Economic, Social, Technological, Legal

and Environmental (PESTLE). From the analysis, among the advantages of suborbital flight operation include the shift of roles for space development from public agency to private enterprise, creation of a new industry to generate revenue, opportunity for public to go to space, demand for new, low cost and reusable technology and material, lenient regulation for a new industry and also the potential atmospheric studies for environment. On the other hand, among the disadvantages of suborbital flight operation that have been established include the absence of international consensus on the boundary between air and space, required capital to develop new technology and infrastructure, risk of injury and fatality to flight participants and third party, limited track record for flight safety, uncertainty on regulatory body and the air pollution from flight activity. All in all, it can be taken that there are many advantages that suborbital flight could bring to a nation but its subsequent disadvantages have to be carefully considered as well.

Subsurface structural pattern distributions of the magnetic anomalies in part of the Nigerian Southwestern Precambrian Basement Complex

John Kayode, Nawawi Mohd and Khiruddin Abdullah (Universiti Sains Malaysia, Malaysia)

Abstract: The study of the subsurface structural patterns technique was carried out to locate, classify and outline the magnetic anomaly source rocks underlain the Omu-Aran Schist belt zone together with the determination of the depth of these various source rocks within the study area. The processes were carried out through series of E-W and N-S geomagnetic cross-sections across the 58.70 by 56.8 km spreading across the study area, in part of the Nigerian South-western Precambrian Basement Complex. The primary objective of this studies is to use an uncomplicated technique to locate these magnetic anomalies that support mineralisation potential in the area. The subsurface geological structural patterns of this area was adequately mapped using the Oasis Montaj 2014 source parameter imaging function integrated with Surfer 10 and euldph-x Algorithm that automatically computes the depths to the various magnetic anomaly sources using the aeromagnetic data acquired from the Nigerian Geological Survey Agency. These anomaly sources as delineated, consist of arrays of north-north-east and south-south-west trending the underneath structures that control the surface geologic characteristics which determined the mineral prospective in parts of the north-east zone, the north-west and the south-western zones in the study area with very low and high values of the total magnetic intensity. Various geological source models that include; the rock contacts; dykes; sills; cylinders, pipes, and spheres of the magnetic anomalies were delineated. The large dome-shaped structure that overlain a buried block of inferred meta-sedimentary rocks in this area suggests that subsurface mineral distributions in the Omu-Aran Schist belt subsurface Crusts may perhaps be influenced by its location in the highly mineralised Nigerian South-western Basement Complex together with the rich mafic and ultramafic granitic-migmatite Basement Terrain that simultaneously underlain the area.

The Impact of Fragmented Forest towards Elephant's Habitat Loss in Kota Tinggi District, Johor using **Remote Sensing Approach**

Noordyana Hassan, Sazlieya Saupi Teri and Nurul Nadiah Yahya (Universiti Teknologi Malaysia, Malaysia); Mazlan Hashim (Prof, Malaysia)

Abstract: The loss of Asian Elephant's habitat due to forest fragmentation is severe in tropical country. The population of Asian Elephants need a close monitoring since the number of elephants observed are declining. Anthropogenic disturbance is one of the main cause of forest fragmentation as their habitats demolished by human activities for the purpose of agriculture and residential development. Therefore, the presence study is aimed to identify the forest fragmentation patterns and the impact towards elephant's habitat loss in a span of 10 years using remote sensing techniques. Maximum likelihood classification was utilized in identification of the forest fragmentation pattern before change detection was applied. The statistical analysis then was employed to identify the impact of forest fragmentation towards elephant's habitat loss. Results show that the fragmented forest into agriculture land like oil palm will have higher damage which is one of source of food for hunger elephants that have lost their habitat. Results of this study has suggested that this serious problem can be overcome by re-planting the forest or the main source of food for Asian Elephants over the fragmented area as a prevention of human-elephant conflict.

A measurement campaign of air pollution at the street level in Kuala Lumpur City: an integrated approach to find the key hotspots areas

Md Firoz Khan (UKM, Malaysia); Mohd Talib Latif, Mazrura Sahani and Shahrul Nadzir (Universiti Kebangsaan Malaysia, Malaysia); Norhayati Mohd Tahir (Universiti Malaysia Terengganu, Malaysia) Abstract: Aerosol pollution is of great concern in the tropical regions of Southeast Asia as these particles can pose

deleterious impact on human health. The concentration of the particles is greatly influenced by the anthropogenic activities and local monsoonal circulation. These particles decrease visibility, alter cloud albedo and influence climate change via scattering and absorbing radiation. Recent finding suggest fine particles in the urban environment could cause severe Alzheimer's disease to the population living near the roadways. However, this type of phenomenon has not been fully investigtd in Kuala Lumpur. Thus this study has been carried out to spell out the objectives: a) to study the trend analysis of PNC; b) relate to the source regions; c) to estimate the possible risk on human health. Therefore, the particle number concentration (PNC) was recorded through the use of Nanoscan and Optical particle sizer (OPS) for the wide ranges of 10 nm to 420 nm and 0.300 µm to 10 µm, respectively. Additionally, ozone (O3) at the surface level, meteorological parameters and the GPS coordinates were recorded in 1 min resolution. The equipment and other devices were accommodated to a four wheeler vehicle and the inlets were kept on the roof of the vehicle. This campaign was designed for a period of 4 January 2017 to 11 January 2017 on the main streets of Kuala Lumpur and the nearby areas during the daytime. The campaign was operated at the city centre, residence, industrial and the palm oil plantation areas. Briefly, the results showed that the sharp peaks of PNC were observed in the range of ultrafine and fine mode at the city centre areas as compared to the residential and palm oil plantation areas.

ABSTRACT - POSTER

Interplanetary Origin of Large, Super and Super Great Geomagnetic Storms Observed during 1996 to 2012

Sham Singh (Chandigarh Engineering College, India)

Abstract: In this paper we present the results of an investigation of the sequence of events from the Sun to the Earth that ultimately led to the 80 large geomagnetic storms (defined by minimum Dst \leq -100nT to -200nT), 11 super geomagnetic storms (Dst \leq -200nT to -300nT) and 6 super great geomagnetic storms (Dst \leq -300 nT) occurred during 1996-2012. The main source of large storms were found to be solar flares (M-class and X-class), however, good number of these storms were also produced by CIR. All the super and super great storms were observed during maximum and declining phase of solar cycle (2000-2004). It is observed that all (100%) super and super great storms were associated with CMEs and flares. Super storms associated with CMEs are more often accompanied by Mclass and X-class flares.

Ionospheric storm monitoring system using GNSS-TEC observations

Takuya Tsugawa (National Institute of Information and Communications Technology, Japan); Michi Nishioka (National Institute of Information and Communications Technology & Space Weather and Environment Informatics Laboratory, Japan); Hidekatsu Jin and Mamoru Ishii (National Institute of Information and Communications Technology, Japan)

Abstract: Two-dimensional ionospheric total electron content (TEC) maps have been derived from ground-based GNSS receiver networks and applied to studies of various ionospheric disturbances since mid-1990s. For the purpose of monitoring and researching ionospheric space weather phenomena, NICT has developed TEC maps over Japan using the dense GPS network, GEONET, which consists of more than 1,200 GPS receivers and is operated by Geospatial Information Authority of Japan (GSI). Using these TEC data, we have been developing ionospheric storm monitoring system. For warning of ionospheric storms, a scale is needed to characterize their magnitude. We propose a new ionospheric storm scale, I-scale, which is based on statistical analysis using the TEC data from 1997 to 2014. Seasonal, local-time, and latitudinal dependences of TEC and variabilities are excluded by normalizing each percentage variations using their statistical standard deviations. The proposed I-scale can be used for other locations, such as polar and equatorial regions.

Venue

About Kuala Lumpur



Kuala Lumpur is the capital of Malaysia and is truly one of a kind of city. You'll find the world in this city but you'll never find anything quite like it elsewhere in the world. For starters, KL (as we fondly call it) has its own global icon, i.e., the PETRONAS Twin Towers, standing 452 meters (88 floors) tall. This mega skyscraper towers majestically over KL, showing a remarkable icon for the city. You can up there to experience the spectacular cityscape of KL. Down to the old streets of KL, you will be experiencing the traditional Malaysia's multi-race cultures, namely, Malay, Chinese, and Indian. Also, you can experience scrumptious cuisines from multiple races. To discover more, this official link (Visit KL) will show you the must-see destinations and must-do activities that will thrill you certainly.

Seri Pacific Hotel Kuala Lumpur



The conference will be held at Seri Pacific Hotel KL, a five star business hotel, ~45 mins drive from Kuala Lumpur International Airport (KLIA). In the city, you can get to this hotel by RapidKL Light Rail Transit (LRT) at Putra World Trade Centre (PWTC) station, about 2-minute walking distance.

Accommodation

Participants can choose to stay at Seri Pacific Hotel or other hotels around Kuala Lumpur. We suggest to stay close to the RapidKL LRT station such as Masjid Jamek, Bandaraya and Sultan Ismail.

For accommodation at Seri Pacific Hotel, please fill in the Hotel Reservation Form. Parking is complimentary for hotel's guest.

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