

Programme blocks

Monday 19 th August 2019	10:00 – 11:30	Opening ceremony
	11:30 – 13:00	Session Modeling and Validation
	13:00 – 14:00	Lunch break
	14:00 – 15:30	Session Modeling and Validation
	15:30 – 16:00	Coffee Break
	16:00 – 17:30	Session Polar (high-latitude) Effects on GNSS
	19:30	Ice Breaker
Tuesday 20 th August 2019	9:00 – 10:30	Session Irregularities and Scintillation Measurements and Effects
	10:30 – 11:00	Coffee Break
	11:00 – 12:30	Session Irregularities and Scintillation Measurements and Effects
	12:30 – 13:30	Lunch break
	13:30 – 15:00	Session Irregularities and Scintillation Measurements and Effects
	15:00 – 15:15	Coffee Break
	15:15 – 16:45	Session Theory and Modeling of Ionospheric Scintillation and Irregularities
	16:45 – 19:00	Poster Session
	19:30	Planetarium show
Wednesday 21 st August 2019	9:00 – 10:30	Session Space and Ground-based TEC Techniques and Measurements
	10:30 – 11:00	Coffee Break
	11:00 – 12:30	Session Space and Ground-based TEC Techniques and Measurements
	12:30 – 13:30	Lunch break
	13:30 – 15:00	Session Radio Occultation Techniques and Measurements
	15:00 – 18:00	Sightseeing (Olsztyn Castle, Old Town)
	20:00	Conference Dinner
Thursday 22 nd August 2019	9:00 – 10:30	Session Data Assimilation Modeling
	10:30 – 11:00	Coffee Break
	11:00 – 12:30	Session Space Weather Effects
	12:30 – 13:30	Lunch break
	13:30 – 15:00	Session Space Weather Effects
	15:00 – 15:15	Coffee Break
	15:15 – 16:45	Session Ionospheric Effects on Satellite Based Navigation System
	16:45 – 17:00	Coffee Break
	17:00 – 18:30	Session Ionospheric Effects on Satellite Based Navigation System
Friday 23 rd August 2019	9:00 – 10:30	Session Monitoring Natural Hazards: Signatures of Earth-Ocean Coupling to the Ionosphere
	10:30 – 11:00	Coffee Break
	11:00 – 12:30	Session Emerging Topics of Interest to the Beacon Satellite Studies
	12:30 – 13:30	Lunch break
	13:30 – 15:00	Closing ceremony

Opening ceremony, Monday 19 th August 2019, 10:00 – 11:30	
Welcome – Prof. Jerzy Jaroszewski , Vice-Rector for Research, UWM	
The Beacon Satellite Symposium 2019 – Patricia Doherty , BC	
ICG address – Sharafat Gadimova , ICG	
Greetings and acknowledgements – Andrzej Krankowski , UWM	
Dedication to Andrzej Wernik – Hanna Rothkaehl , Józef Modelski and colleagues	
Keynote lecture, Recent challenges of space plasma diagnostics in the European satellite projects – Hanna Rothkaehl , SRC PAS	

Session Modeling and Validation , Monday 19 th August 2019, 11:30 – 13:00	
Chairs: Manuel Hernandez-Pajares and Maxim Klimenko	
11:30	Modeling the Hemispherical Differences in Storm Enhanced Density and the Tongue of Ionization – Anthea Coster
11:45	B2 thickness parameter response to Equinoctial geomagnetic storms – Yenca Migoya Orue
12:00	Benefits of IGS RTS for real-time global ionospheric total electron content modeling – Zishen Li
12:15	Station based GPS Slant Total Electron Content (STEC) Prediction – Mainul Hoque
12:30	Structure and variability of the main ionospheric trough: empirical modeling, validation and physical explanation – Maksim Klimenko
12:45	Feed forward neural network based ionospheric model for the East African region – Ambelu Tebabal Yirdaw

Session Modeling and Validation , Monday 19 th August 2019, 14:00 – 15:30	
Chairs: Manuel Hernandez-Pajares and Maxim Klimenko	
14:00	Solar Activity drivers in empirical ionospheric models: Validating E-CHAIM and exploring intermediate timescales in the high latitude topside – David Themens
14:15	First-principles model prediction of some new ionospheric phenomena and disturbances that should be validated – Maksim Klimenko
14:30	Development of a GUVI/SSUSI-based model for E-region electron density enhancements at northern auroral latitudes – Chris Watson
14:45	To what extent can E-CHAIM be used as a model of total electron content? – David Themens
15:00	Modeling ionosphere response to Solar Proton Events in the whole atmosphere model EAGLE – Fedor Bessarab
15:15	TBA

Session Polar (high-latitude) Effects on GNSS , Monday 19 th August 2019, 16:00 – 17:30	
Chairs: Nicolas Bergeot and Pierre Cilliers	
16:00	The Polar Ionosphere seen through Global Ionospheric Maps – Manuel Hernandez-Pajares
16:15	Multi-constellation GNSS observation of ionospheric scintillation at SANAE-IV in Antarctica – P.J. Cilliers
16:30	GNSS-based empirical models for inter-hemispheric comparison of the ionosphere-plasmasphere system at mid-latitude – Nicolas Bergeot
16:45	HAPEE, a statistical approach for scintillation prediction in the polar region – Knut Stanley Jacobsen
17:00	Effect of auroral substorm on GPS slip in the polar ionosphere – Alexander Chernyshov
17:15	TBA

Session Irregularities and Scintillation Measurements and Effects , Tuesday 20 th August 2019, 9:00 – 10:30	
Chairs: Keith Groves, Iurii Cherniak and Andrzej Krankowski	
9:00	Measurement of Ionospheric and Atmospheric Structures Using Navigation Satellite Signals Captured with Software-Defined Systems – Jade Morton
9:15	Forcing from Lower Thermosphere and the Longitudinal Variability of Ionospheric Dynamics – Endawoke Yizengaw
9:30	Scintillations probabilities of occurrence – Yannick Béniguel
9:45	Effects on GNSS from heating using the Arecibo HF facility – Poppy Martin
10:00	Ionospheric Scintillation and its effect on GPS tracking performance in China Low Latitude – Donghe Zhang
10:15	TBA

Session Irregularities and Scintillation Measurements and Effects , Tuesday 20 th August 2019, 11:00 – 12:30	
Chairs: Keith Groves, Iurii Cherniak and Andrzej Krankowski	
11:00	Reconciling Radar and Satellite Beacon Scintillation using the Inverse Diffraction Technique – Charles Carrano
11:15	Is there link between high-latitude ionospheric irregularities and large-scale traveling ionospheric disturbances? – Irina Zakharenkova
11:30	GPS amplitude and phase scintillation associated with polar cap ionization structures – Jayachandran Thayyil
11:45	Wideband characterisation of equatorial ionospheric scintillation using MUOS transmissions – Joeal Subash
12:00	Characteristics of GNSS signal outages observed from the Arctic and Antarctic regions – Dibyendu Sur
12:15	TBA

Session Irregularities and Scintillation Measurements and Effects , Tuesday 20 th August 2019, 13:30 – 15:00	
Chairs: Keith Groves, Iurii Cherniak and Andrzej Krankowski	
13:30	Monitoring and understanding of plasma irregularities induced by Space Weather – Iurii Cherniak
13:45	Ionosphere Irregularity Monitoring with multi-GNSS Observations: Methodology and Applications – Ningbo Wang
14:00	A method to get the drift velocity of ionospheric irregularities from three spaced GNSS-TEC receivers – Jinghua Li
14:15	Spatial Fluctuation of TEC Index A new index of ionospheric irregularities – Guanyi Ma
14:30	Investigating the role of gravity waves on equatorial ionospheric irregularities using TIMED/SABER and C/NOFS satellite observations – Melessew Nigussie
14:45	Effects of Ionospheric Scintillation on GNSS Positioning Error – Jiangtao Fan

Session Theory and Modeling of Ionospheric Scintillation and Irregularities , Tuesday 20 th August 2019, 15:15 – 16:45 Chairs: Chuck Rino and Biagio Forte	
15:15	Ionospheric Structure, Stochastic TEC, and Scintillation Diagnostics – Charles Rino
15:30	Relation between signal frequency dependence of S4 index and ESF irregularity spectrum: Modeling and observations at different latitudes – Archana Bhattacharyya
15:45	Spatio-temporal analysis of LOFAR scintillation measurements – Marcin Grzesiak
16:00	Nocturnal equatorial zonal plasma drift over the Indian low latitude region: Estimation based on the L-band scintillation irregularities as tracer – Mala Bagiya
16:15	Generation of Realizations of Electron Density for Numerical Electromagnetic Propagation Simulations – Dennis Knepp
16:30	Simulation of the Effects from Equatorial Plasma Bubbles Detected by the C/NOFS Planar Langmuir Probe on Propagation of Transionospheric Radio Signals – Emanoel Costa

Session Space and Ground-based TEC Techniques and Measurements , Wednesday 21 st August 2019, 9:00 – 10:30 Chairs: Sandro Radicella , Babatunde Rabi and Irina Zakharenkova	
9:00	Ionospheric Variability due to Solar Flares – Anthea Coster
9:15	New IGS Ionospheric Analysis Centers (NRCan, CAS- IGG, WHU and DGFI-TUM) – Andrzej Krankowski
9:30	Use of a modified NeQuick2 for the evaluation of different 3D Ionospheric algorithms – Raul Orus Perez
9:45	Multi-constellation GNSS tomography for accurate ionospheric imaging – Jon Bruno
10:00	Removing Obliquity Error from the Estimation of Ionospheric Total Electron Content – Lawrence Sparks
10:15	Visualization and characterization of the regional and continental TEC inhomogeneities based on the dense networks of GNSS receivers – Grzegorz Nykiel

Session Space and Ground-based TEC Techniques and Measurements , Wednesday 21 st August 2019, 11:00 – 12:30 Chairs: Sandro Radicella , Babatunde Rabi and Irina Zakharenkova	
11:00	Total electron content derived from GNSS signals by double thin-shell model and implication in ionospheric dynamics near the magnetic equator – Takashi Maruyama
11:15	On the Spatial-Temporal Variation of GPS-Measured Total Electron Content over Nigeria within Equatorial Ionospheric Anomaly Region – Babatunde Rabi
11:30	Effects of different estimation techniques of GPS-TEC on the prediction of TEC and comparison with values from IRI-2016, NeQuick-2 and IRI-Plas 2015 models – Adekola Adewale
11:45	New physical models for the multi-instrumental diagnostics of ionosphere dynamics – Yuriy Rapoport
12:00	TBA
12:15	TBA

Session Radio Occultation Techniques and Measurements , Wednesday 21 st August 2019, 13:30 – 15:00 Chairs: Ron Caton and Jann-Yeng Liu	
13:30	Ionospheric GNSS Radio Occultation observations of FORMOSAT-3/COSMIC and FORMOSAT-7/COSMIC – Jann Yeng Liu
13:45	Geolocation and Characterization of Ionospheric Irregularities using Radio Occultation Observations of Scintillation – Charles Carrano
14:00	GNSS Radio Occultations as a key instrument for topside ionosphere climatology – Iurii Cherniak
14:15	Study of sporadic e layers based on gps radio occultation measurements and digisonde data over the brazilian region – Laysa Resende
14:30	Sporadic E Signatures in Radio Signals and their Application for the Study of Medium-Scale Traveling Ionospheric Disturbances – Wookyoung Lee
14:45	TBA

Session Data Assimilation Modeling , Thursday 22 nd August 2019, 9:00 – 10:30 Chairs: Bruno Nava and Matthew Angling	
9:00	The Spire TEC Environment Assimilative Model (STEAM); a new 4D ionospheric data assimilation model using Spire radio occultation data – Matthew Angling
9:15	Ionospheric 4-D Multi-Instrument Tomography with Gaussian Markov Random Field Priors – Johannes Norberg
9:30	Near-Real-Time Data Assimilation of the High Latitude Ionosphere – Ben Reid
9:45	Adaption and modification of Ionospheric model to improve model predictions in the Indian Equatorial Ionization Anomaly (EIA) region – Sheetal Karia
10:00	Statistical analysis of results of updating the ionospheric model IRI-Plas from slant total electron content – Daria Kotova
10:15	Climate VTEC maps in cooperation of IGS' GNSS and GIRO sensor networks - ionospheric events detection possibilities - case study – Adam Froń

Session Space Weather Effects , Thursday 22 nd August 2019, 11:00 – 12:30 Chairs: Iwona Stanislawska and Endawoke Yizengaw	
11:00	Helio-Geophysical Prediction Service in Poland Past, Present and Future – Iwona Stanislawska
11:15	Capability study of GNSS based ionospheric indices – Norbert Jakowski
11:30	Monitoring and analysis of the TIDs triggered by magnetic storms and their impact on EGNOS availability degradation – Dalia Buresova
11:45	Modulation of ionosphere-plasmasphere interaction by weak magnetic storms: Mid-latitude effects in European and Japanese longitudinal sectors – Dmytro Kotov
12:00	Studying the Dependence of Weddell Sea Ionospheric Anomaly on the Helio- and Geophysical Activity Using Median Time-Height Charts – Andriy Zalizovski
12:15	Super-fountain effect linked with 17 March 2015 geomagnetic storm manifesting distinct F3 layer – Venkatesh Kavutarapu

Session Space Weather Effects , Thursday 22 nd August 2019, 13:30 – 15:00 Chairs: Iwona Stanislawska and Endawoke Yizengaw	
13:30	LOFAR4SW: New capability for Space Weather science by radio diagnostic – Hanna Rothkaehl
13:45	Space weather effects of the 6 September 2017 X-class solar flares – Yury Yasyukevich
14:00	Tomographic imaging and modelling of a LSTID during geomagnetic storm conditions – Karl Bolmgren
14:15	On the Simultaneous Effect of Prompt Penetration Electric Field and Associated Hemispheric Asymmetry in Low Latitude Ionosphere – Nirvikar Dashora
14:30	Analysis of electromagnetic plasma turbulence in Very Low Frequency (VLF) range using wavelet and higher order analysis techniques – Deepak Kumar Sondhiya
14:45	TBA

Session Ionospheric Effects on Satellite Based Navigation System , Thursday 22 nd August 2019, 15:15 – 16:45 Chairs: Patricia Doherty and Ashik Paul	
15:15	Temporal and spatial ionospheric disturbances and their effects on Satellite Navigation Services – Jens Berdermann
15:30	Relation of multi-frequency GNSS signal scattering with equatorial ionospheric irregularity dynamics at VHF – Ashik Paul
15:45	Simulating Ionospheric Effects on GPS Signals in Space – Teddy M. Surco Espejo
16:00	Global Navigational Satellite System phase altimetry of the sea level: systematic bias effect caused by sea surface waves – Y.A. Ilyushin
16:15	Signal outages during geomagnetic storms from the northern crest of the equatorial anomaly in the Indian longitude sector – Bidyut Roy
16:30	Statistical Analysis of Nighttime TEC Depletions and GPS Loss of Lock in the Crest of Anomaly Region – Shivalika Sarkar

Session Ionospheric Effects on Satellite Based Navigation System , Thursday 22 nd August 2019, 17:00 – 18:30 Chairs: Patricia Doherty and Ashik Paul	
17:00	BDGIM: A new global ionospheric correction model for BeiDou-3 system – Yunbin Yuan
17:15	Ionospheric Assessment for Satellite Navigation over the Australasian Region – Eric Altshuler
17:30	Impact of ionospheric disturbances on operation of Global navigation satellite systems at mid- and high-latitudes – Anna Yasyukevich
17:45	Low Cost, Compact GNSS Modules for Atmospheric Probing – Anindya Bose
18:00	Performance evaluation of SBAS Systems due to Magnetic Storms in the Solar Cycle 24 – Surendra Sunda
18:15	Preliminary Performance Analysis of IRNSS in Sea Environment – Pedda Naraiah Rairala

Session Monitoring Natural Hazards: Signatures of Earth-Ocean Coupling to the Ionosphere , Friday 23 rd August 2019, 9:00 – 10:30 Chairs: Attila Komjathy and Elvira Astafyeva	
9:00	GPS technologies as means for natural hazards monitoring – Sergey Pulnits
9:15	Ionospheric imprint of a seismic source: possibilities & challenges – Elvira Astafyeva
9:30	New Directions in Detecting Natural Hazards Using Real-Time and Post-Processed Ground-Based GNSS Measurements – Attila Komjathy
9:45	Revelation of early detection of coseismic ionospheric perturbations in GPS-TEC from realistic modelling approach: Case studies – Dhanya Thomas
10:00	Simulation of ionospheric responses driven by acoustic and gravity waves following inland earthquakes – Pavel Inchin
10:15	VARION extension to GEO satellites: application to recent tsunami induced TIDs events – Michela Ravanelli

Session Emerging Topics of Interest to the Beacon Satellite Studies , Friday 23 rd August 2019, 11:00 – 12:30 Chairs: Patricia Doherty , Andrzej Krankowski and Bruno Nava	
11:00	Radio Beacon Monitoring for Ionospheric Scintillation Specification and Total Electron Content from the FORMOSAT-7/COSMIC-2 Science Mission – Ron Caton
11:15	IONONet: A deep learning model for ionospheric nowcast – Raul Orus Perez
11:30	Modeling center-of-mass of the ionosphere from the slab-thickness – Gulyaeva Tamara
11:45	Generalized Force Approach to Point-to-Point Ray Tracing in Reconstructed Ionosphere by Radio Tomography Data – Igor Nosikov
12:00	Climatology of Quasi-two day Oscillations from GPS-derived total electron content during 1999-2015 – Fekadu Demissie Feleke
12:15	TBA

Closing ceremony, Friday 23 rd August 2019, 13:30 – 15:00	
Presentation of Awards	
Best Presentation and Young Scientist Awards (winners selected by the session chairs)	
Beacon Satellite Studies Group Discussion	
Plans for Proceedings and Special Issue of Radio Science	
What can we do better?	
BSS 2022 – where will it be?	

Poster Session, Tuesday 20 th August 2019, 16:45 – 19:00 Chair: Bartosz Dąbrowski	
Irregularities and Scintillation Measurements and Effects	
Study of thermospheric gravity wave characteristics and their behavior in relation to the occurrence of equatorial plasma irregularities in the post sunset time using radio, and optical measurements – Subir Mandal	
Impact of auroral disturbance on GNSS positioning – Irk Shagimuratov	
Characteristics of IRNSS/NavIC Signals during the traversal of ionospheric plasma irregularities over Indian low latitude region, Sangli (16.85oN, 74.57oE) – Onkar Gurav	
Characteristics of ionospheric irregularities over Indian low-latitude region Varanasi during ascending phase of solar cycle 24 – Abhay Kumar Singh	
Seasonal and solar flux dependence of pre and post-midnight equatorial plasma irregularities as studied using ground based radio experiments – Sripathi S.	
Variability of quiet time ionospheric irregularities over the crests and trough of the African Equatorial Ionization Anomaly (EIA) region – Paul Amaechi	
A study on the occurrence of strong late night ionospheric scintillations at lower altitudes – Lijo Jose	

Ionosonde spread F and GPS L-band scintillation occurrence during moderate geomagnetic storms near the southern crest of the EIA in Argentina – Gilda de Lourdes González
Behavior of 6 different GPS receivers at low latitude under moderate scintillation – Eurico de Paula
Occurrence climatology of E- and F-region field-aligned irregularities in the middle latitudes as observed by the Daejeon 40.8 MHz coherent scatter radar in South Korea – Young-Sil Kwak
Ionospheric scintillation observations with Baldy (PL 612) LOFAR station – Kacper Kotulak
Efficiency of ionospheric scintillation indices and new index based on the GNSS high-rate data: analysis based on case study – Maria Sergeeva
The low-latitude ionospheric scintillation observation and positioning by FORMOSAT-3/COSMIC beacon receiver stations – Tung Yuan Hsiao
A Quantitative Comparison of Ground based L-band Scintillation and In situ F-region Irregularities From Swarm – Sharon Aol
Characteristics of equatorial nighttime spread F - an analysis on season-longitude, solar activity and triggering causes – Ephrem Seba
Inter-hourly variability of Total Electron Content during the quiet condition over Nigeria, within the Equatorial Ionization Anomaly region – Toyese Tunde Ayorinde
Prediction probability of GPS S4 scintillation data over the Brazilian territory - Ivan Jelinek Kantor
Theory and Modeling of Ionospheric Scintillation and Irregularities
Ionospheric turbulent parameter inversion using scintillation log-amplitude spectra: performance and results – Vincent Fabbro
Modeling the radio occultation scintillation data of FORMOSAT-3/COSMIC – Shih Ping Chen
The probability distribution of the high latitude scintillation indices during the solar cycle 24 – Karim Meziane
Modeling and Validation
Updates on ionospheric research in Ethiopia – Tsegaye Gogie
Modeling Ionospheric Total Electron Content over the African Region – Patrick Mungufeni
Comparison of quiet time ionospheric total electron content from IRI-2016 model and GPS observations – Mulugeta Zegeye
Artificial Neural Network Model based Estimation of Equatorial Vertical ExB Drift over South American and Indian sectors – Sunanda Suresh
Variation of α -Chapman scale height at an African equatorial station – Shola Adebiji
Space and Ground-based TEC Techniques and Measurements
Status of CAS global ionospheric maps after the maximum of solar cycle 24 – Ningbo Wang
Estimation and Preliminary analysis of Ionospheric delay due to IRNSS L5 and IRI -2016 model for various Seasons – Devireddy Kavitha
Database oriented system for analysing small and medium scale TEC irregularities – Mariusz Pożoga
High Accuracy TEC estimation based on Ionospheric Observable from PPP with Ambiguity Resolution – João Monico
Application of geostationary GNSS signals for studying TEC variability in equatorial ionosphere on different time scales – A.M Padokhin
The local Total Electron Content (TEC) fluctuations climatology – Kacper Kotulak
Ground-based receiver network for TEC measurements over the Peruvian sector – Edgardo Pacheco
Structure and temporal variation of ionosphere derived from LOFAR calibration routine – Katarzyna Budzińska
Study of positive and negative ionospheric storm in the brazilian sector occurred on december 19, 2015 – Carolina Carmo
Total Electron Content Seasonality in European Middle Latitudes in Respect of Local Time – Josip Vuković
First OIS experiments in Mexico – Maria Sergeeva
Ionospheric Studies Using IRNSS Receivers and Comparison with Other GNSS – Dadaso Shetti
Radio Occultation Techniques and Measurements
Aspects of Electron Density Profiles measured by RO of FORMOSAT-3/COSMIC Satellites and Digisonde over Cyprus – Tanmay Das
Analysis of the coverage of radio occultation electron density profiles over the Brazilian region – João Monico
Polar (high-latitude) Effects on GNSS
Ionosphere-Plasmasphere empirical model over Antarctica region – Nicolas Bergeot

Investigation of GPS phase scintillations at Troll station during geomagnetic disturbances in 2018 – Arnlaug Skjaeveland
Polar studies – Ashl Enr
Space Weather Effects
On the ionospheric response to long duration recurring coronal holes, high speed streams and corotating interaction region during the decreasing phase of solar cycle 24 – Claudia Candido
Effect of intense geomagnetic storms on low latitude ionosphere during ascending phase of solar cycle 24 – Abhay Kumar Singh
Space Weather effects on regional short term TEC and scintillation forecasting – Juliana Damaceno
Geoeffectiveness Structure of some Geomagnetic and Interplanetary Parameters in Extreme Perturbations of GIC Proxy Index: Observation and Simulation Results – Babatunde Adebisin
Ionospheric TEC response to geomagnetic storms occurred on 15-20 March 2013 and 2015 over the Eastern Africa region – Emmanuel Sulungu
Response of equatorial and low latitude ionosphere during the severe G4-class geomagnetic storm of 8th September 2017 – Bapan Paul
Remote sensing of the magnetospheric plasma by means of VLF chorus emissions observed at low latitude Indian ground stations – Jammu and Gulmarg Krishna Kumar Singh
Ionospheric Effects on Satellite Based Navigation Systems
Effects of Lunar tides on the F Region of the Ionosphere – Vera Yesutor Tsali-Brown
Ionospheric-equivalent slab-thickness and peak height at the F2 region of an equatorial latitude over West Africa– Olumide Odeyemi
Degradation of satellite-based navigation performance observed from an anomaly crest location – Samiddha Goswami
Ionospheric irregularities impact on PPP – Adam Froń
Satellite launch vehicle effect on the Earth’s lower ionosphere – Kumarjit Saha
Monitoring Natural Hazards: Signatures of Earth-Ocean Coupling to the Ionosphere
Origin of the ahead of tsunami traveling ionospheric disturbances during Sumatra tsunami and offshore forecasting – Mala Bagiya
Local and regional ionospheric disturbances during intense meteorological events in the Kaliningrad region in 2014-2018 – Mikhail Karpov
Revealing of anomaly in ionospheric TEC for mid-latitude earthquakes – Shivali Verma
Investigation of Electromagnetic Waves Associated with Oceanic Earthquakes in context of Earth-Oceanic Coupling – Suryanshu Choudhary
Study of the ionospheric response to sudden stratospheric warmings: planetary and tidal signature in mid-latitude fof2 and global electron content – Aleksandr Timchenko
Ionosphere regional disturbances in the period of the October 24, 2018 meteorological storm – Borchevkina Olga
Emerging Topics of Interest to the Beacon Satellite Studies
Investigation of sources of gravity waves observed in the Brazilian Equatorial region on 08 April 2005 – Oluwakemi Dare-Idowu