

# AOSWA LINK

Issue 1, January 2013



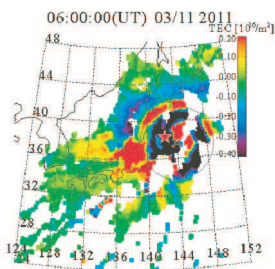
Season's Greeting  
from new director of AOSWA office

Page 2



Researchers of Korea and Japan  
discussed the regional GPS-TEC data  
exchange

Page 3



Pick of this edition

Concentric waves observed in the  
ionosphere after the 2011 Tohoku  
earthquake

Page 4



Information

Call for Papers: IconSpace2013

Page 5

## Welcome to the AOSWA Link

The Link is intended to serve as a communication forum for the AOSWA community. Through content developed by AOSWA members and by secretariat staff we hope to provide readers with a wealth of information about the organization and its work. Information in the Link is aimed at AOSWA participants as well as users of Space Weather forecast.

We need your help to make this publication a success and a useful communication tool. Your input and content submissions will be critical. We are very open to suggestions and topics of interest at any time. Your information such as meeting, topics of research or operation are welcomed. It is preferred that your manuscript is within 500 words and contains several figures. Please do not hesitate to submit any feedback to this publication to [Secretariat at AOSWA Office](mailto:sw-project-office@ml.nict.go.jp) at any time.

Best wishes for the New Year! Email: [sw-project-office@ml.nict.go.jp](mailto:sw-project-office@ml.nict.go.jp)

## Season's Greeting from new director of AOSWA office



Dr. Mamoru Ishii  
New director of AOSWA Office

Dear AOSWA members;

I started to work as a director of Space weather and environment Informatics laboratory, NICT since September 1, 2012. And I work as a director of AOSWA office as a successor of former director Dr. Murata.

I have been a research manager of Space environment group between 2006-2009 and worked for SEALION, so I already have a lot of friends in the AOSWA members. I am glad to have cooperative works with you and to have new friends from now on.

As you know, we have the peak period of cycle 24 on this new year and expect highly active period in space environment. It is a very good chance to observe very rare phenomena and to find new results, and to move on, it is very important to have close cooperation with each other. I hope that AOSWA works for a framework of our good communication and cooperation.

I have a notice about Inter-programme Coordination Team on Space Weather (ICTSW). ICTSW was established as a program of UN/WMO in May 2010. Now nineteen countries and seven International organizations join the team, and Terrance Onsager (USA) and Xianxin Zhang (China) Works as co-chairs. The third meeting was held on Brusells, Belgium.

<http://www.wmo.int/pages/prog/sat/meetings/ICTSW-3.php>

In this meeting we discussed to increase the member, especially from Asia-Oceanian countries.

All AOSWA members are welcomed to join the ICTSW. If you are interested in it, please contact to me or co-chairs (terry.onsager@noaa.gov).

I wish you have a nice new year.

## COLLABORATION...EXTRAORDINARY RESULTS

## Researchers of Korea and Japan discussed the regional GPS-TEC data exchange at NICT



On October 4 (Thu) and 5 (Fri) in 2012, three Korean researchers, Dr. Seung Jun Oh, Dr. Lee Jeong-Deok and Dr. Yongha Kim, visited NICT (National Institute of Information and Communications Technology, Japan).

Dr. Seung Jun Oh and Dr. Lee Jeong-Deok belong to SELab (Space Environment Laboratory, Inc., Seoul, Korea). SELab is a contractor of KMA (Korea Meteorological Administration, Korea) and RRA (National Radio Research Agency, Korea).

Dr. Yongha Kim is a researcher of CNU (Chungnam National University, Korea). He studies the ionosphere in collaboration with KMA.

The three guests discussed the Space Weather Operation of NICT, including OneSpaceNet (a science cloud in NICT) with researchers of NICT. They also discussed regional GPS-TEC data exchange and technical issues including the perspectives of the collaboration between Korea and Japan.

The data exchange is expected to bring the accuracy improvement of Space Weather Operation in Korea and Japan. As a part of activity of AOSWA, which encourages the collaboration through data and information exchange in Asia-Oceania region, it was decided

to discuss more how to exchange data concretely.

On Thursday, special seminar was held. In the seminar, Dr. Seung Jun Oh and Dr. Yongha Kim made presentations. The title of Dr. Seung Jun Oh's presentation was "The current status of the Space Weather Operations in Korea: The R2O transition activities by SELab". The introduction and the current status of the space weather operation and research by Korean government and research institute was summarized focusing on the R2O transition activities by SELab., and the ongoing ionospheric research activities by SELab was presented. The title of Dr. Yongha Kim's presentation was "A Study on ionosphere - plasmasphere coupling based on JASON TEC data and SAMI2 model". He discussed SAMI2 model relations between ionospheric and plasmaspheric TEC in comparison with JASON data.

KMA: Korea Meteorological Administration  
<http://web.kma.go.kr/eng/index.jsp>

RRA: National Radio Research Agency, Korea  
<http://rra.go.kr/eng/index.jsp>

CNU: Chungnam National University  
<http://plus.cnu.ac.kr/english/index.jsp>

GPS-TEC:

GPS: Global Positioning System

TEC: Ionospheric Total Electron Content

R2O transition: Research to Operation transition



## Pick of this edition

### Concentric waves observed in the ionosphere after the 2011 Tohoku earthquake

Takuya Tsugawa (NICT, Japan)

E-mail: [tsugawa@nict.go.jp](mailto:tsugawa@nict.go.jp)

Ionospheric disturbances were observed by GPS total electron content (TEC) in Japan after the 2011 Tohoku earthquake off the Pacific coast of northern Honshu on March 11. High-resolution GPS-TEC maps revealed clear concentric waves propagating away from the vicinity of epicenter were detected from about 7 minutes to several hours after the earthquake.

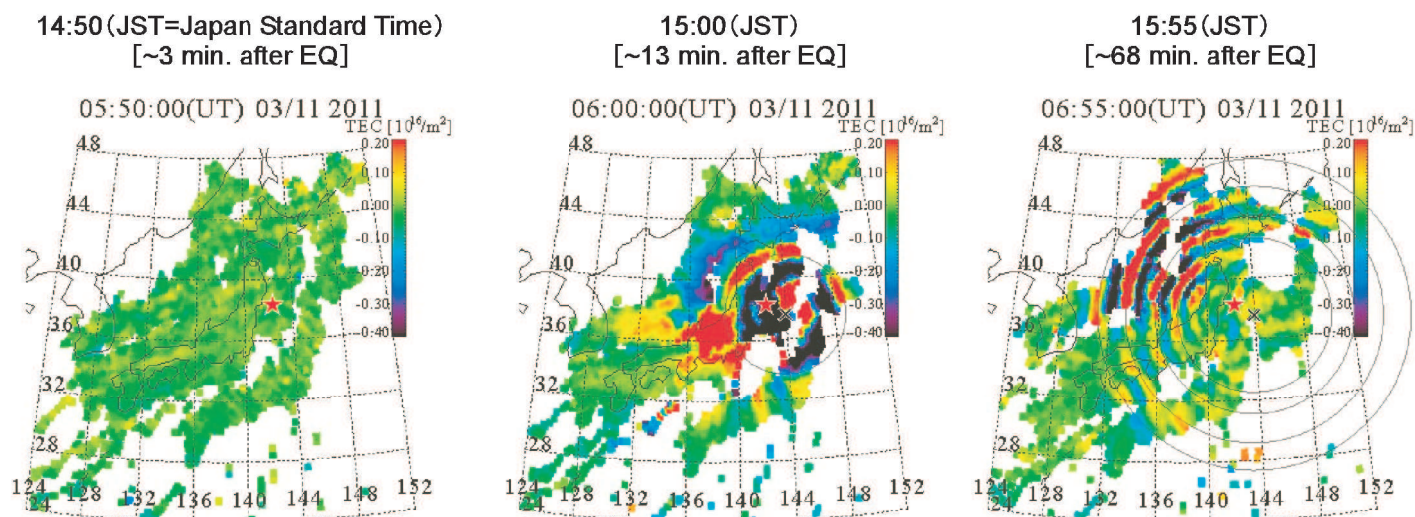


Figure 1. Two-dimensional maps of total electron content (TEC) variation derived using the data of GEONET, a dense GPS receiver network operated by GSI. The TEC data are detrended values derived by subtracting 10-minute running average of the data. The Sstar and cross marks represent the epicenter and "ionospheric epicenter", respectively. Gray circles represent concentric circles with the ionospheric epicenter. The animation of TEC maps is available on the NICT website ( <http://www.seg.nict.go.jp/2011TohokuEarthquake> ).

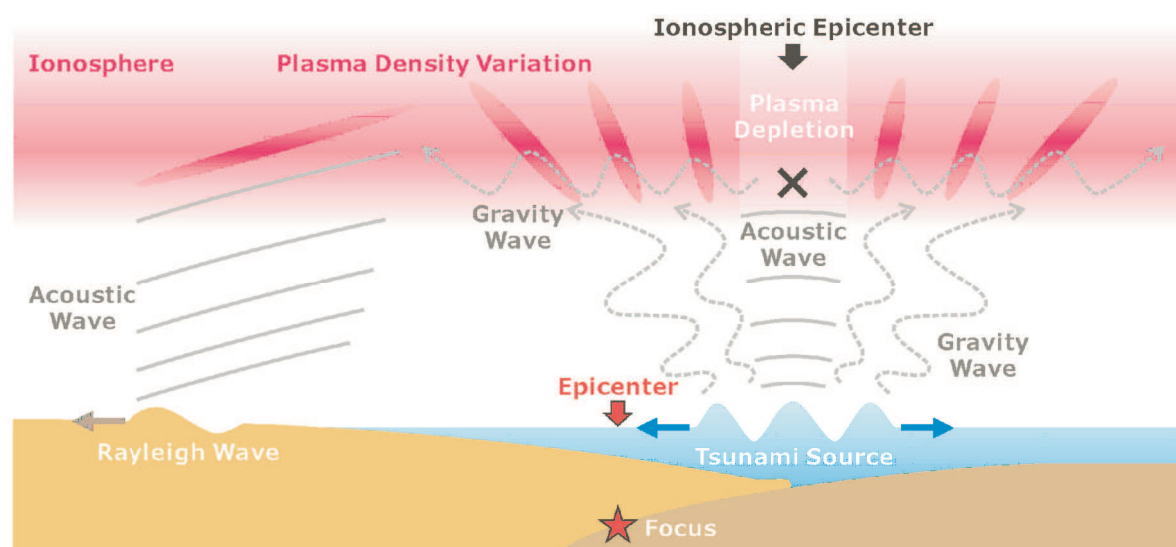


Figure 2. Schematic picture of the generation mechanism of atmospheric waves and ionospheric variations after the earthquake. It is considered that the first ionospheric concentric wave with the propagation velocity of about 3.5 km/s was caused by the acoustic wave generated from the propagating Rayleigh wave. The second and following concentric waves would correspond to the atmospheric gravity waves (AGW) propagating in the ionosphere. These AGWs are considered to be

## COLLABORATION... EXTRAORDINARY RESULTS

## Information

IconSpace2013  
2013 IEEE International Conference on Space Science and  
Communication  
Malacca, Malaysia  
1-3 July 2013



2013

Institute of Space Science (ANGKASA) of Universiti Kebangsaan Malaysia (UKM) is proud to host the third biennial 2013 IEEE International Conference on Space Science and Communication (IconSpace2013). The conference themed "Facing the Challenges of the Solar Maximum" is technically co-sponsored by IEEE through IEEE Malaysia Communication - Vehicular Technology Society Chapter. Aimed at bringing together worldwide researchers in the fields of space science and communication technology, this conference seeks to reduce distance barriers whilst paving way for future research collaborations. In light of this matter, ANGKASA extends her hand and cordially invites academicians, scientists, engineers and students from academia, industry and government to participate in this conference.

We are soliciting original papers describing the state-of-the-art research and development inclusive (but are not limited to) of the following technical areas:

- Atmospheric sciences
- Astrophysics and Astronomy
- Remote Sensing
- Satellite and Communication Technology
- Smart Materials for Space Applications
- Space Education

## Important Dates

Full paper submission	: 28 February 2013
Acceptance notification	: 1 April 2013
Early bird payment	: 15 April 2013
Camera ready with payment	: 15 May 2013
Conference Tutorial	: 1 July 2013
Conference day	: 2-3 July 2013
Onsite registration (for non-presenter)	: 2 July 2013
Early Bird Tutorial	: 15 April 2013
Tutorial Registration	: 15 Jun 2013

Paper submission process will be managed by using the EDAS system: <http://edas.info/N13195>. The peer-reviewed and presented papers will be published in the softcopy conference proceedings by IEEE. The papers in the proceedings with ISSN will be listed in the IEEE Xplore database.

Please visit our website

<http://www.ukm.my/iconspace2013> for conference details, or contact [iconspace@ukm.my](mailto:iconspace@ukm.my) for further information.

## Prof. Dr. Mahamod Ismail

Chair IconSpace2013

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## About AOSWA



Established in 2010 by the institutes concerning space weather in Asia-Oceania region, the Asia-Oceania Space Weather Alliance (AOSWA) encourages the collaboration through data and information exchange system, workshop, newsletter, mailing lists, and so on.

Email: [sw-project-office@ml.nict.go.jp](mailto:sw-project-office@ml.nict.go.jp)