

**Nineteenth UN/IAF Workshop**  
on “*Integrated Space Technologies and Space-based Information for*  
*Analysis and Prediction of Climate Change*”

**To be held in Daejeon, Republic of Korea, from 9 to 11 October 2009,**  
**in conjunction with the 60<sup>th</sup> International Astronautical Congress**

**Tentative Programme (as of 05/10/2009)**

**Day 1, October 9, 2009**

**Registration -** 08:00 – 09:00  
**Inaugural Session -** 09:00 – 10:10

*Master of ceremony - Dr. Chin Young Hwang, KARI, Republic of Korea*

09:00 – 09:30 **Opening ceremony**

- **Mr. Sang Mok Lee**, Deputy Minister for Science & Technology Policy, Ministry of Education, Science and Technology, Republic of Korea
- **Amb. Ciro Arevalo**, Chairman, United Nations Committee on the Peaceful Uses of Outer Space (COPUOS)
- **Mr. Jean-Charles Bigot**, Administrator, International Relations, European Space Agency
- **Prof. Dr. Berndt Feuerbacher**, President, International Astronautical Federation
- **Dr. Takao Doi**, Head, United Nations Programme on Space Applications

09:30 – 09:50 Keynote Address I (*overview of climate change issues*)

**Dr. Joo-jin Lee**

President of Korea Aerospace Research Institute (KARI)

09:50 - 10:10 Keynote Address II (*space tools applicable to climate change studies*)

**Dr. Jean-Louis Fellous**

Executive Director,  
Committee on Space Research (COSPAR)

**Tea break -** 10:10 – 10:30

**Technical Session 1 -** 10:30 – 13:00

**Chairs: Mr. Philippe Willekens, Executive Director, International Astronautical Federation (IAF) and Prof. Choen Kim, Kookmin University, Republic of Korea**

- **International and regional frameworks, initiatives and cooperation**
- **Capacity building**

10:30 – 10:50 ESA Climate Change Initiative

**Mr. Einar-Arne Herland**  
ESRIN/ESA

10:50 – 11:10 GEOSS and Climate Change: Global Observations and Data Sharing in Support of Decision Making

**Ms. Masami Onoda**  
GEO Secretariat, Switzerland

11:10 – 11:30 The Impacts of Global Climate Change in Africa

**Mr. Babagana Abubakar**  
Kanuri Development Association, Nigeria

11:30 – 11:50	Increasing Student Awareness of How Space Technologies are Used for the Analysis and Prediction of Climate Change	<b>Ms. Naomi Mathers</b> Victorian Space Science Education Centre (VSSEC), Australia
11:50 – 12:10	Capacity Building in Space Technologies in Developing Countries	<b>Mr. Z. Minia</b> National Meteorological Agency, Ghana
12:10 – 12:30	Capacity Building Activities of the UN-OOSA	<b>Mr. Sergei Chernikov</b> UN-OOSA
12:30 – 13:00	Workshop discussion	

**Lunch reception hosted by Local Organizing Committee - 13:00 – 14:00**

**Technical Session 2 - 14:00 – 18:00**

**Chairs: Dr. Nadine Gobron, Committee on Space Research (COSPAR) and Dr. Ae Sook Suh, Korea Meteorological Satellite Center, Republic of Korea**

**Application of space-based information and space technologies for observation/monitoring climate change**

- Presentations and discussions on space-related technologies and information resources available for addressing monitoring, analyzing, modeling and predicting climate change;
- Presentations on practical experiences and case studies by participants.

14:00 – 14:20	Application of Microwave Remote Sensing Techniques for the Global Water Cycle Research	<b>Dr. Kyoung-Wook Jin</b> Korea Aerospace Research Institute, Republic of Korea
14:20 – 14:40	Integrated Method for Monitoring Terrestrial Carbon from Space	<b>Dr. Nadine Gobron</b> COSPAR
14:40 – 15:00	A Combined Analysis of Satellite Remote Sensing and Simulation by Several Models (a GCM and a Global Non Hydrostatic High Resolution Model) for Understanding the Role of Aerosol and Clouds in the Climate Formation Process	<b>Dr. Teruyuki Nakajima</b> Center for Climate System Research, University of Tokyo, Japan
15:00 – 15:20	State of Use of Spatial Data/Spatial-based Technology in the Study of Climate Change in Guatemala	<b>Mr. Carlos Alberto Duarte Carranza</b> Institute for Environment, Natural Resources and Agriculture (IARNA), Guatemala
15:20 – 15:40	Canada's Space-based Climate Change Program and Activities	<b>Dr. David J.W. Kendall</b> Canadian Space Agency, Canada
15:40 – 16:00	Detecting Change of Borders of the Aral Sea for 2004-2007 Using Space Remote Sensing Data	<b>Ms. Assyl Bakasheva</b> The L.N. Gumilyov Eurasian National University, Kazakhstan

**Tea break - 16:00 – 16:30**

16:30 – 16:50	Korean Waters Monitoring by Using SeaWiFS & NOAA Satellite Imagery	<b>Dr. Yu-Hwan Ahn</b> Ocean Satellite Remote Sensing & Observation Technology Research Dept., Republic of Korea
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16:50 – 17:10	Establishment and Use of High Accuracy Quick Bird Imagery Database for Calculating Climate Change Scenario in Mekong Delta in Vietnam	<b>Mr. Xuan Lam Nguyen</b> National Remote Sensing Center, Ministry of Natural Resources and Environment, Vietnam
17:10 – 17:30	Application of Remote Sensing Technology in Climate Monitoring and Predication in Kenya	<b>Mr. Samwel O. Marigi</b> Meteorological Department, Kenya
17:30 – 18:00	Workshop discussion	

**Welcome reception organized by KARI – 18:30 – 20:00**

## Day 2, October 10, 2009

**Technical Session 3 – 09:00 – 13:00**

**Chairs: Dr. Einar-Arne Herland, ESA and Dr. Eun-Sup Sim, KARI, Republic of Korea**

### **Space technologies and information resources for monitoring, prediction and early warning of climate change induced disasters and environmental hazards**

- Presentations on low-cost space-related technologies and information resources available for addressing social and economic issues caused by climate change and global warming;
- Use of small satellites systems for climate change observations;
- Presentations on practical experiences and case studies by participants.

09:00 – 09:20	Surface Temperature Monitoring Using Thermal Infrared Images of Optical Satellite and GIS	<b>Dr. Myung Hee Jo</b> Kyungil University, Republic of Korea
09:20 – 09:40	Carbon Observations from Space by GOSAT and International Activities	<b>Dr. Takashi Moriyama</b> Earth Observation Research Center, JAXA, Japan
09:40 – 10:00	Integrated Geo-informatics Technology for Monitoring the Impact of Climate Change in Thailand	<b>Ms. Prukpitiku Siriluk</b> Geo-Informatics and Space Technology Development Agency, Thailand
10:00 – 10:20	The Nano-Satellite Mission Concept to Analyze the Processes and Changes in Upper Atmosphere of the Earth for Climate Change Observation and Monitoring	<b>Mr. A. Romanov</b> Institute of Space Device Engineering, Russia
10:20 – 10:40	Climate Monitoring Satellite	<b>Ms. Wei Sun</b> OHB System AG, Germany
10:40 – 11:00	Using the Sumbandilasat Small Satellite Program for Development	<b>Dr. Sias Mostert</b> Space Commercial Services Ltd., South Africa

**Tea break - 11:00 – 11:30**

11:30 – 11:50	The environmental Satellite's Challengers for Climate Change Monitoring	<b>Dr. Luiz Augusto Toledo Machado</b> Center for Weather Forecast and Climate Studies, National Institute for Space Research (INPE), Brazil
11:50 – 12:10	Global Warming and its Consequences	<b>Prof. U. R. Rao</b> PRL Council, ISRO, India

- 12:10 – 12:30      Satellite imagery for desertification and drought monitoring in Morocco      **Mr. N. Bijaber**  
 Royal Center for Remote Sensing (CRTS), Morocco
- 12:30 – 13:00      Workshop discussion

**Lunch reception hosted by Local Organizing Committee - 13:00 – 14:00**

**Working Groups Meetings – 14:00 – 15:30**

Two or three Working Groups will be established to prepare for the Round Table discussion in addressing questions on critical issues/focal themes identified at the technical sessions

- 14:00 – 14:15      Introduction to the WG meeting and formation of Working Groups  
 14:15 – 15:30      Working Groups Meeting      In parallel

**Tea break - 15:30 – 16:00**

**Round Table Discussion - 16:00 – 17:30**

**Moderator: Dr. Takao Doi, Head of the UN Programme on Space Applications**

A concluding Round Table discussion will be organized with participation of top-level representatives of space agencies and other relevant national/regional/international institutions and organizations from both space faring and non-space faring countries in order to establish a direct dialogue with the Workshop participants on how space technologies and policies can contribute into reduction of climate change impact. The round table will also attempt to draw conclusions and to formulate recommendations that will serve as an input to the IAC Plenary Event No. 5 on Climate Change to be held on 14 October 2009.

**Round Table Panelists: Dr. Se-jin KWON** (Professor, Division of Aerospace Engineering, KAIST, Republic of Korea), **Dr. Luiz Augusto Toledo MACHADO** (Senior Researcher, Center for Weather Forecast and Climate Studies of INPE, Brazil), **Dr. David J.W. KENDALL** (Director, Space Science, Canadian Space Agency, Canada), **Mr. Zinendeme MINIA** (Deputy Director-General, Ghana Meteorological Agency, Ghana), **Dr. Xuan Lam NGUYEN** (Director, National Remote Sensing Center, Vietnam), **Dr. Einar-Arne Herland** (Head, Science Strategy, ESRIN/ESA).

**Concluding Session – 17:30 – 18:00**

**Chairs: Amb. Ciro Arevalo, Chairman of the UN-COPUOS and Dr. Se-jin Kwon, KAIST, Republic of Korea**

- 17:30 – 17:50      **Closing remarks**
- **Prof. Cheon Kim**, Kookmin University, Republic of Korea
  - **Mr. Jean-Charles Bigot**, European Space Agency
  - **Mr. Philippe Willekens**, IAF
  - **Mr. Sergei Chernikov**, UN-OOSA

- 17:50 – 18:00      Briefing on the 2010 event      LOC – Czech Republic

**Dinner reception organized by KARI – 19:00 – 21:00**

### **Day 3, October 11, 2009**

- 09:00 – 12:00      Technical visit to KARI, KAIST and Satrec-i facilities

**Presentations scheduled for poster sessions, 9 – 10 October:**

9 October PM	Opportunities for receiving free GeoEye imagery	<b>Mr. Thomas Snitch</b> Little Falls Associates Inc., USA
9 October PM	Using WEAP (Water Evaluation & Planning System) Models to Help in Preparation for Future Tendencies of Climate Change	<b>Mr. Jeffrey R. Rivera Alvarez</b> Ministry of Environment & Natural Resources, Guatemala
9 October PM	Use of Space Technologies to Address Drought Problems in Iran	<b>Mr. Seyyed Ali Taherzadeh</b> Iranian Space Agency (ISA), Iran
9 October PM	Space Applications in Lao PDR	<b>Mr. Boun Xou Matmanisone</b> Department of Space Technology, National Authority for Science and Technology, Laos
10 October AM	Managing Disasters in Nigeria Using Space Technology	<b>Mr. Babatunde Peter Akinola</b> African Regional Center for Space Science and Technology Education, Nigeria
10 October AM	Space Technology Applications to Disaster Risk Management in Climate Change Adaptation in the Republic of Philippines	<b>Mr. Elvis Cruz</b> National Disaster Coordinating Council, Philippines
10 October AM	Activities of NRSC of Mongolia	<b>Mr. Khudulmur Sodov</b> National Remote Sensing Center, Mongolia
10 October AM	Space-related Technologies, Services and Information Resources Which Are Available for Observation/ Monitoring, Analysis, Modelling and Prediction of Climate Change – Case Study of Seychelles	<b>Mr. Vincent Amelie</b> National Meteorological Services, Ministry of Environment, Natural Resources & Transport, Seychelles
10 October PM	Weather Satellite Communications	<b>Ms. Jane Olotu</b> National Meteorological Agency, Tanzania
10 October PM	Monitoring Ozone Layer over Iraq	<b>Ms. Saadiyah Al-Juaifari</b> Directorate of Aeronautic and Space Technology, Ministry of Science & Technology, Iraq
10 October PM	Application of Satellite Images and Monitoring the Climate Change and its Impact in Bangladesh	<b>Mr. Md. Manzurul Hoque Khan</b> Bangladesh Meteorological Department, Bangladesh