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## International Workshop on “Inventory, Modeling and Climate Impacts of Greenhouse Gas emissions (GHG’s) and Aerosols in the Asian Region”

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**Date** : June 26-28, 2013

**Venue** : Tsukuba International Conference Center (EPOCHAL Tsukuba),  
Conference room 406  
(2-20-3, Takezono, Tsukuba, Ibaraki, 305-0032, Japan)  
<http://www.epochal.or.jp/eng/index.html>

**Host** : NIES (National Institute for Environmental Studies), Japan  
GOFC/START, USA

**Support** : ACAP (Asia Center for Air Pollution Research), Japan

**Conveners** : Toshimasa Ohara (NIES) [tohara@nies.go.jp](mailto:tohara@nies.go.jp)  
Krishna Prasad Vadrevu (UMCP) [krisvkp@umd.edu](mailto:krisvkp@umd.edu)



*Photographs by the ACAP*

# International Workshop on “Inventory, Modeling and Climate Impacts of Greenhouse Gas emissions (GHG’s) and Aerosols in the Asian Region”

Sponsors:



**Objective:** Greenhouse gas (GHG) emissions and short lived climate pollutants (SLCP) from the Asian region have been increasing continuously due to rapid population growth and industrial activities. Quantification of GHG’s and SLCP from different sources in Asia and understanding their climate impacts is an important task requiring integration of both top-down (satellite remote sensing) and bottom-up (ground based) approaches including modeling. Through involving GOFC-GOLD - Southeast Asia Regional Research and Information Network (SEARRIN) linked with other international and domestic activities (such as EANET and ERTDF S-7 Project), we envisage to achieve the following objectives: a). review GHG and SLCP emission estimates and methodologies from different sources including biomass burning in the Asian region; b). understand the impact of GHG’s and aerosols on local climate; c). explore the potential of satellite remote sensing datasets for quantifying biomass burning pollutants, aerosols and pollution episodes; d). review inverse modeling approaches for characterizing emissions; e). strengthen the SEARRIN activities in the region through identifying new point of contact for the network.

**Meeting dates:** 26th (afternoon) - 28th June, 2013

**Venue:** Meeting room 406, Tsukuba International Conference Center (EPOCHAL Tsukuba), Tsukuba, Japan

**Host:** National Institute for Environmental Studies (NIES), Japan

## **Workshop Convenors:**

### **Toshimasa Ohara, Dr.**

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National Institute for Environmental Studies (NIES)  
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## **Agenda**

### **Wednesday, June 26th, 2013**

#### **Afternoon: 13.00 to 18.00**

- 13.00 Welcoming remarks – Toshimasa Ohara (NIES) /Hajime Akimoto (ACAP)  
13.15 Objectives of the Meeting – Chris Justice/Krishna Vadrevu (University of Maryland, USA)

#### ***I. Session topic: Regional campaigns/studies in Asia***

##### ***Session Chair: Krishna Vadrevu (University of Maryland, USA)***

*Keynote presentations: (25-minutes presentation followed by 5-minutes discussion)*

- 13.30 ERTDF S-7 Project – Hajime Akimoto (ACAP, Japan)  
14.00 7-SEAS campaign-Jeff Reid (NRL, USA)/George Lin (National Central University, Taiwan)  
14.30 Regional Emission inventory in ASia (REAS) version 2 – Toshimasa Ohara (NIES, Japan)

*15.00–15.30–Tea Break*

#### ***II. Session topic: Anthropogenic emission inventories in Asia***

##### ***Session Chair: Toshimasa Ohara (NIES, Japan)***

*Contributed presentations (20-minutes presentation followed by 5-minutes discussion)*

- 15.30 Urban pollutants and inventory in Asia/India - Bhola Gurjar (IIT, Roorke, India)

- 15.55 GHG emissions estimation from LULUCF sector - Kiyoto Tanabe (IGES, IPCC-TSU, Japan)
- 16.20 Global and Asian NO<sub>x</sub> emission estimates derived from a combined assimilation of multiple satellite observations – Kazuyuki Miyazaki (JAMSTEC, Japan)
- 16.45 Global and regional emissions estimates for N<sub>2</sub>O–Eri Saikawa (Emory University, USA)
- 17.10 Inverse modeling of long-term CO emission in China with Green's function method and forward sensitivity – Keiya Yumimoto (MRI, Japan)
- 17.35 Ensemble Kalman filter assimilation of MODIS AOT in a non-hydrostatic icosahedral aerosol transport model – Tie Dai (IAP, China)
- 18.00 *Adjourn*
- 18.20 *Reception*

**Thursday, June 27th, 2013**

**Morning 9.00 - 12.50**

***III. Session topic: Earth Observation Programs in Land Cover/Land Use/Air Pollution/GHG emissions and Coordination Activities***

***Session Chair: Chris Justice (University of Maryland, USA)***

*Keynote presentation: (25-minutes presentation followed by 5-minutes discussion)*

- 9.00 NASA LCLUC program; LC/LUC and Atmospheric interactions-Chris Justice (Univ. of Maryland, USA)

*Contributed presentations (15-minutes presentations followed by 5-minutes discussion)*

- 9.30 JAXA Remote Sensing Satellite Missions – Utilization for Earth and Environment Observation – Toshiyoshi Kimura (JAXA/EORC, Japan)
- 9.50 Satellite remote sensing datasets for Environmental/pollution research – Liew Soo Chin (CRISP, NUS, Singapore).
- 10.10 Estimation of global CO<sub>2</sub> and CH<sub>4</sub> emissions with land cover characterization by remote sensing - Wataru Takeuchi (Univ. of Tokyo, Japan)
- 10.30 GOSAT - CO<sub>2</sub> and CH<sub>4</sub> measurements from space – Tatsuya Yokota (NIES, Japan)

10.50 Satellite observations as a tool for studying carbon emissions over Asia–Tom Oda (NOAA ESRL, USA)

*11.10-11.30-Tea Break (including group picture)*

11.30 Night time VIIRS data and applications – Chris Elvidge (NOAA, USA)

11.50 Remote sensing applications on land use/cover and air pollution in south Vietnam-Lam Dao Nguyen (RS&GIS center, Vietnam)

12.10 Satellite data applications in Indonesia – Kustiyo (Indonesia National Institute of Aeronautics and Space, Indonesia)

12.30 Potential of GCOM-C1/SGLI datasets for quantifying biomass and water stress–Koji Kajiwara, Yoshiaki Honda (Chiba University, Japan) and Hiroshi Murakami (Earth Observation Research Center, JAXA, Japan)

*12.50-13.45 Lunch*

**Afternoon 13.45-18.00**

***IV. Session topic: Biomass burning emissions***

***Session Chair: Krishna Vadrevu (University of Maryland, USA)***

*Keynote presentation: (25-minutes presentation followed by 5-minutes discussion)*

13.45 Satellite derived Fire products for Biomass burning studies - Chris Justice (Univ. of Maryland, USA)

*Contributed presentations (15-minute presentations followed by 5-minute discussion)*

14.15 Biomass burning in Thailand – Narisira Thongboonchoo (KMIT, Thailand)

14.35 Emissions of NO<sub>x</sub> and CO from wildfires in Siberia: Satellite detection and its environmental impacts – Hiroshi Tanimoto (NIES, Japan)

14.55 Land-use and carbon stock in slash-and-burn agriculture in tropical mountains as assessed by time-series satellite data and in-situ measurements: a case study in Laos - Yoshio Inoue (NIAES, Japan)

15.15 Biomass burning in Central Asia–Magsar Erenduteya (National Remote Sensing Center of Mongolia)

*15.35-16.00-Tea Break*

- 16.00 Recent active forest fires on Peatland in Indonesia – Hiroshi Hayasaka (Hokkaido University, Japan)
- 16.20 Biomass burning in Malaysia- Mastura Mahmud (Universiti Kebangsaan, Malaysia)
- 16.40 Operational fire danger rating (FDR) in Indonesia–Israr Albar (Ministry of forestry, Indonesia)
- 17.00 India/IGP biomass burning emissions and uncertainties – Krishna Vadrevu (University of Maryland, USA)
- 17.20 Biomass burning in Southeast Asia from field studies to satellite data analysis – Haruo Tsuruta (Univ. of Tokyo, Japan)
- 17.40 Southeast Asia working group of IGAC - Discussion– Hiroshi Tanimoto (NIES, Japan)

18:00 *Adjourn*

***Dinner for guests***

***Friday, June 28th, 2013***

***Morning 9.00-12.30***

***V. Session topic: Aerosols, Climate Change and Air Quality***

***Session Chair: Teruyuki Nakajima (University of Tokyo, Japan)***

*Keynote presentation (25 minutes presentation followed by 5-minutes discussion)*

- 9.00 Satellite remote sensing of aerosols – Past, present and future–Teruyuki Nakajima (Univ. of Tokyo, Japan)

*Contributed presentations (20-minutes presentation followed by 5-minutes discussion)*

- 9.30 Aerosol atmospheric interactions in the Asian region– Umesh Kulshresta (JNU, India)
- 9.55 Field observations of aerosols and related species in East Asia to constrain model simulations and emission inventories –Yugo Kanaya (JAMSTEC, Japan)

*10.20-10.50–Tea Break*

- 10.50 Observation of air pollution aerosols and Asian dusts using the Asian dust and aerosol Lidar observation network (AD-Net) - Tomoaki Nishizawa (NIES, Japan)
- 11.15 Ground observation of aerosols in North East Asia – Akinori Takami (NIES, Japan)

11.40 An application of HDDM sensitivity analysis over East Asia – Syuichi Itahashi (CRIEPI, Japan)

12.05 Simulation of aerosol spatial distribution over Asia using a global aerosol model - Daisuke Goto (NIES, Japan)

*12.30-13:30-Lunch*

**Afternoon 13.30-15.30**

***V. Session topic: Aerosols, Climate Change and Air Quality (continued)***

***Session Chair: Yugo Kanaya (JAMSTEC, Japan)***

*Contributed presentations (20-minutes presentation followed by 5-minutes discussion)*

13.30 Global modeling and projection of short-lived climate pollutants – Kengo Sudo (Nagoya Univ., Japan)

13.55 Particulate matter concentration estimation from satellite aerosol and meteorological parameters, a case study from Hanoi Vietnam – Thanh Nguyen (Vietnam National University, Vietnam)

14.20 Validating GHG Satellite Data Using the Total Carbon Column Observing Network–Ronald Macatangay (University of Phillipines, Phillipines)

***VI. Session topic: SEARRIN***

14.45 South East Asia Regional Information Network (SEARRIN) discussion – Chris Justice and Krishna Vadrevu (UMd, USA)

**Closing session**

15.25 Concluding Remarks from the Host – Toshimasa Ohara (NIES, Japan)

*15.30 Meeting adjourn*

**Wireless LAN information**

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Passphrase	nies2013
Authentication method	WPA2-PSK (AES)