

6th IWGGMS Agenda

January 26, 2010 (Tuesday)

(Presenter)

09:00-09:35 Registration

09:35-09:45 Welcome address

Yoshifumi Yasuoka (NIES, Japan)

Space Mission Overview

Chair: Masakatsu Nakajima (JAXA, Japan)

09:45-10:00 One year operation results of TANSO on GOSAT

Akihiko Kuze (JAXA, Japan)

10:00-10:15 Overview of GOSAT data processing and data product distribution

Tatsuya Yokota (NIES, Japan)

10:15-10:35 Atmospheric Carbon Observations from Space (ACOS): contributions to the GOSAT mission

David Crisp (JPL, USA)

Break (15 min.)

10:50-11:10 Carbon dioxide and methane from SCIAMACHY on ENVISAT

Michael Buchwitz (Univ. Bremen, Germany)

11:10-11:30 Total column methane for the years 2003-2009 as seen by SCIAMACHY: Trends and variability

Christian Frankenberg (SRON, Netherlands)

11:30-11:50 7-Years of AIRS mid-tropospheric CO₂ Sept 2002 – Dec 2009

Moustafa Chahine (JPL, USA)

11:50-12:10 Seven years' observation of mid-upper tropospheric CH₄ and CO₂ from AIRS and recent observation from IASI at NOAA

Xiaozhen Xiong (NOAA, USA)

12:10-12:30 Characterization of Tropospheric Emission Spectrometer (TES) CO₂ for carbon cycle science

John Worden (JPL, USA)

Lunch break (60 min.)

13:30-14:30 **Poster Session (Odd-numbered posters are presented.)**

GOSAT Sensor, Calibration, and Retrievals Chair: Ryoichi Imasu (Univ. Tokyo/CCSR, Japan)

14:30-14:50 Overview of GOSAT/CAI measurements of the atmosphere

Teruyuki Nakajima (Univ. Tokyo/CCSR, Japan)

14:50-15:10 Status of calibration of TANSO FTS and CAI onboard GOSAT

Kei Shiomi (JAXA/EORC, Japan)

15:10-15:30 ACOS contributions to the 2009 GOSAT vicarious calibration experiments over Railroad Valley, Nevada

Harold R. Pollock (JPL, USA)

Break (15 min.)

15:45-16:05 Current status of the TANSO-FTS SWIR L2 processing

Yukio Yoshida (NIES, Japan)

16:05-16:25 Sensitivity of XCO₂ retrievals from GOSAT data to aerosol distributions and optical properties

Hartmut Boesch (Univ. Leicester, UK)

- 16:25-16:45 Evaluation of strategies to account for scattering effects in greenhouse gas retrievals from space **Andre Butz (SRON, Netherlands)**
- 16:45 Adjourn

January 27, 2010 (Wednesday)

9:00 The conference venue is opened.

Satellite Data Validation

Chair: Charles Miller (JPL, USA)

- 09:20-09:40 xCO₂ and xCH₄ retrievals from the Total Column Carbon Observing Network (TCCON) during the first year of GOSAT operations **Debra Wunch (CalTech, USA)**
- 09:40-10:00 Airborne validation of total column CO₂, CH₄ and CO measurements over six European FTIR sites **Justus Notholt (Univ. Bremen, Germany)**
- 10:00-10:20 Long-term and 3-D records of atmospheric CO₂ observed by CONTRAIL project **Toshinobu Machida (NIES, Japan)**
- 10:20-10:40 Current status for validation of GOSAT standard products **Isamu Morino (NIES, Japan)**

Break (10 min.)

10:50-11:50 **Poster Session (*Even*-numbered posters are presented.)**

Lunch break (70 min.)

Source/Sink Estimation

Chair: Tatsuya Yokota (NIES, Japan)

- 13:00-13:20 Global carbon cycle modeling tools for GOSAT data analysis **Shamil Maksyutov (NIES, Japan)**
- 13:20-13:40 Comparing the information content of various satellite and surface measurements of CO₂ **Peter Rayner (LSCE, France)**
- 13:40-14:00 Estimation of sources and sinks of CO₂ and CH₄ from GOSAT: Expected accuracy and preliminary results with real data **Frederic Chevallier (LSCE, France)**
- 14:00-14:20 Recent changes in the global sources and sinks of methane derived from SCIAMACHY **Sander Howeling (SRON, Netherlands)**
- 14:20-14:40 Inverse modeling of carbon sources and sinks using TES CO₂ observations **Dylan Jones (Univ. Toronto, Canada)**

Break (20 min.)

General Topics and Future Missions

Chair: Haruhisa Shimoda (Tokai Univ., Japan)

- 15:00-15:20 Global measurement of CO₂ from space: Challenges and perspectives **Jianping Mao (NASA/GSFC, USA)**
- 15:20-15:40 Future greenhouse gas observation strategies for science and society **Stacey Boland (JPL, USA)**
- 15:40-16:00 Airborne demonstration of potential mission concept for space-based active remote sensing of CO₂ **Edward Browell (NASA/LaRC, USA)**

16:00-16:20 Carbon monitoring Satellite (CarbonSat): Mapping of CO₂ and CH₄ from space
Michael Buchwitz (Univ. Bremen, Germany)

General Discussion

16:20-17:00 Workshop summary & general discussion **Chair: Gen Inoue (RIHN, Japan)**
17:00 Closing Remarks **Takashi Hamazaki (JAXA, Japan)**
17:10 Adjourn

17:30 **Conference Dinner**

Poster Presentations

(All poster presenters are asked to be available at their presentations during the specified session hours.)

GOSAT Sensor, Calibration, and Data Processing

01 On orbit status of TANSO on GOSAT **Hiroshi Suto (JAXA, Japan)**
02 Radiometric calibration accuracy of GOSAT TANSO-FTS (TIR) sensor and gaseous component retrieval **Ryoichi Imasu (Univ. Tokyo/CCSR, Japan)**
03 Aircraft measurements of atmospheric CO₂ using the 1.57 μ m laser absorption spectrometer during GOSAT Hokkaido campaign in August 2009 **Shuji Kawakami (JAXA/EORC, Japan)**
04 Latest GOSAT data processing and its availability to users **Hiroshi Watanabe (NIES, Japan)**
05 High-resolution simulations of CO₂ and CH₄ using a NIES atmospheric tracer transport model for producing a priori concentrations used in the retrieval of GOSAT L2 data processing **Tazu Saeki (NIES, Japan)**
06 Evaluation and early results of GOSAT TANSO-FTS SWIR Level 2 product (CO₂ and CH₄ column abundances data) **Nawo Eguchi (NIES, Japan)**
07 Initial results of actual GOSAT SWIR data processing with PPDF-based method **Sergey Oshchepkov (NIES, Japan)**

Retrieval Algorithms

08 Comparison of retrieval approaches for GOSAT **Austin Cogan (Univ. Leicester, UK)**
09 Polarization model for GOSAT and its impact upon retrievals **Denis O'Brien (Colorado State Univ., USA)**
10 Reference radiative transfer model including the polarization effect in a coupled atmosphere-ocean system **Yoshifumi Ota (NIES, Japan)**
11 Channel selection of CO₂ retrieval from near infrared measurements using information content analysis **Le Kuai (CalTech, USA)**
12 Utilization of all spectral channels of IASI for the retrieval of the atmospheric state **Samuele Del Bianco (IFAC, Italy)**

- 13 Carbon dioxide retrieval from IASI measurements using the KLIMA inversion algorithm
Ugo Cortesi (IFAC, Italy)
- 14 CO₂ vertical profile retrieval from GOSAT measurements using neural network approach
Mikhail Kataev (Tomsk Univ., Russia)
- 15 A new Empirical Orthogonal Function (EOF) approach for methane retrieval using AIRS data
Zhang Ying (CAS, P. R. China)
- 16 Current results for the ACOS XCO₂ and surface pressure retrieval algorithms for GOSAT data
Christopher O'Dell (Colorado State Univ., USA)

Regional and Global Gas Concentrations

- 17 Arctic ocean atmosphere CO₂ concentration measurements from AIRS-AMSU: A complement to GOSAT project
Reginald Muskett (Univ. Alaska, USA)
- 18 Correlationship between methane and carbon monoxide concentration in Beijing: from AIRS Level 2 product to ground-based FTS measurements
Zhang Ying (CAS, P. R. China)
- 19 A plan of monitoring greenhouse gas emission from large reservoir by remote sensing
Zhao Dengzhong (China Three Gorges Corp., P. R. China)
- 20 Quantitative remote sensing for monitoring greenhouse gas emissions from hydroelectric reservoirs in China
Bingfang Wu (CAS, P. R. China)
- 21 Multispectral measurements of boundary layer and free tropospheric CO from MOPITT: Implications for carbon cycle science
Helen Worden (NCAR, USA)
- 22 Dynamic multiresolution spatial models applied to remotely sensed greenhouse gas data
Petr Musilek (Univ. Alberta, Canada)
- 23 Programming core for massive assimilation of GOSAT spectra and its first retrieval of carbon gases over Western Siberia
Konstantin Griбанov (Ural State Univ., Russia)

Data Evaluation and Validation

- 24 Validation of atmospheric CO₂ and CH₄ retrieved from GOSAT
Austin Cogan (Univ. Leicester, UK)
- 25 Validation of GOSAT column-averaged mole fraction of carbon dioxide using aircraft measurements by CONTRAIL, NOAA and NIES
Yuki Miyamoto (NIES, Japan)
- 26 Validation of GOSAT methane by ground-based MIR- and NIR FTS at the ground-truthing facility Garmisch/Zugspitze
Ralf Sussmann (IMK-IFU, Germany)
- 27 Aircraft measurement of carbon dioxide for calibration of ground-based high-resolution Fourier Transform Spectrometer at Tsukuba, Japan
Tomoaki Tanaka (NIES, Japan)
- 28 Validation of total column measurements with airborne in-situ profiles of CO₂, CH₄ and CO
Dietrich Feist (MPI, Germany)
- 29 Network observation of GHGs in China and concept of validating satellite remote sensing and model output
Lingxi Zhou (CAMS, P. R. China)

- 30 Compact optical spectrum analyzer to monitor atmospheric CO₂ and CH₄ columns via remote operation **Toshio Ibuki (Kyoto Univ., Japan)**
- 31 Development of Balloon-borne CO₂ instruments **Tomoki Nakayama (Nagoya Univ./STEL, Japan)**
- 32 Strategy for harmonized retrieval of column-averaged methane from the mid-infrared NDACC FTS-network and intercomparison with SCIAMACHY satellite data on global scale **Ralf Sussmann (IMK-IFU, Germany)**

Atmospheric Transport and Inverse Modeling

- 33 Carbon Tracker-Asia, a tool to quantify CO₂ uptake/release focused on Asia **Chun Ho Cho (NIMR, Korea)**
- 34 Inverse modeling system for operational processing of the GOSAT Level 4A regional CO₂ flux data product **Hiroshi Takagi (NIES, Japan)**
- 35 A very high-resolution fossil fuel CO₂ emission inventory for the GOSAT operational flux inversion **Tomohiro Oda (NIES, Japan)**
- 36 Can remote sensing verify carbon-dioxide emissions verification? Recent Pasadena, CA and proposed Farmington, NM studies **Manvendra. Dubey (Los Alamos National Labo., USA)**

Future Lidar Measurements

- 37 Pulsed airborne lidar measurements of atmospheric CO₂ column absorption and line shapes from 3-13 km altitudes **James Abshire (NASA, USA)**
- 38 Continuous wave differential laser absorption spectroscopy of CO₂: Airborne instrument to a space mission concept **Jeremy Dobler (ITT, USA)**

(38 Posters)