

ITSC-16 Initial draft programme

Tuesday 6 May 2008

15.00-19.00 Registration

Wednesday 7 May 2008

8.00 Registration (continues to 15:00)

8.30-8.35 Welcome Co-chairs Allen Huang, Stephen English

8.35-8.55

"Facing the challenges of Meteorology in Tropical South America"

Maria Assunção Faus da Silva Dias - CPTEC/INPE Director

8.55-9.00 Local arrangements Dirceu Herdies, Rodrigo Souza
Review of agenda Co-chairs

9.00-10.15

Session 1: Guy Rochard session on direct broadcast packages, preprocessing, calibration and frequency protection.

Chairs: Pascal Brunel and Liam Gumley

- 1.1 Kathleen Strabala IMAPP: Software to Transform EOS Direct Broadcast Data into Science Products
- 1.2 John Overton International Polar Orbiter Processing Package (IPOPP)
- 1.3 Nigel Atkinson AAPP developments and experiences with processing MetOp data
- 1.4 Liam Gumley EOS Direct Broadcast Real-Time Products for the US National Weather Service
- 1.5 Tom Achtor McIDAS-V - An open source data analysis and visualization tool for multi and hyperspectral satellite data

10.15-10.45 BREAK

10.45-11.30

Session 1: Guy Rochard session on direct broadcast packages, preprocessing, calibration and frequency protection (continued)

Chairs: Pascal Brunel and Liam Gumley

- 1.6 Jean Pla Passive microwave protection: results of WRC-07 and future work plan.
- 1.7 Richard Kelley 3rd Annual Passive Sensing Microwave Workshop Proceedings/Summary
- 1.8 Steve Swadley SSMIS Calibration Anomalies: Observed F-16 and F-17 Anomalies, Detailed Analysis of the Root Causes, and the Path Forward

11.30-12.15

Session 2: The Infrared Atmospheric Sounding Interferometer

Chairs: Thierry Phulpin and Peter Schluessel

- 2.1 Denis Blumstein IASI Performances on MetOp-A after one year in orbit
- 2.2 Lars Fiedler IASI L1 data quality and NRT monitoring at EUMETSAT
- 2.3 Peter Schluessel IASI Level-2 Product Processing at EUMETSAT

12.15-13.45 LUNCH (including poster preparation)

13.45-15.00

Session 3: The Infrared Atmospheric Sounding Interferometer

(continued)

Chairs: Thierry Phulpin and Peter Schluessel

- 2.4 Nicole Jacquinet-Husson Spectroscopic database GEISA-2008 edition: content description and assessment through IASI/MetOp flight data
- 2.5 William Smith Joint Airborne IASI Validation Experiment (JAIVEx) - An Overview
- 2.6 Daniel Zhou Retrievals with the Infrared Atmospheric Sounding Interferometer and validation during JAIVEx
- 2.7 Paolo Antonelli Using JAIVEX data to evaluate the impact of PCA Noise Filtering on the High Spectral Resolution Physical Retrieval Algorithm
- 2.8 Stuart Newman Direct radiance validation of IASI - results from JAIVEx

15.00-15.30 BREAK

15.30-17.00

Session 2: The Infrared Atmospheric Sounding Interferometer

(continued)

Chairs: Thierry Phulpin and Peter Schluessel

- 2.9 Xu Liu Retrieval algorithm using superchannels
- 2.10 Nikita Pougatchev Error Assessment and Validation of the IASI Temperature and Water Vapor Profile Retrievals
- 2.11 Fiona Hilton Assimilation of IASI Radiances at the Met Office
- 2.12 Andrew Collard Monitoring and Assimilation of IASI Radiances at ECMWF
- 2.13 Marc Schwaerz Assimilation of IASI Data into the Regional NWP Model COSMO-EU: Status and Perspectives
- 2.14 Thierry Phulpin Atmospheric Chemistry using IASI / MetOp: Overview of initial results

17.00-18.30

Poster Session A and Icebreaker

Thursday 8 May 2008

8.30-10.15

Session 3: Atmospheric radiative transfer

**Chairs: Marco Matricardi and
Louis Garand**

- 3.1 Paul van Delst and Yong Han Community Radiative Transfer Model (CRTM) Status
- 3.2 Roger Saunders What can RTTOV-9 do for me?
- 3.3 Marco Matricardi An assessment of the accuracy of the RTTOV fast radiative transfer model using IASI data.
- 3.4 Tom Kleespies Microwave Radiative Transfer at the Sub-Field-of-View Resolution
- 3.5 Qi Chengli Error analysis about using CO₂-absorbing band for temperature retrieval
- 3.6 Alan Lipton Fast Forward Modeling in Scattering Atmospheres with Optimum Spectral Sampling
- 3.7 Bormin Huang Development of the Multilayer Cloudy Radiative Transfer Model for the GOES-R Advanced Baseline Imager

10.15-10.45 BREAK

10.45-11.45

Session 4: Surface emission and scattering

Chairs: Fuzhong Weng and Roger Saunders

- 4.1 Jun Li Retrieval of Global Hyperspectral Surface Emissivity Spectra from Advanced Infrared Sounder Radiance Measurements
- 4.2 Jonathan Taylor Using Hyperspectral IR Sounder Data Over Land - PC radiative transfer and 1d-Var.
- 4.3 Eric Pequignot Infrared continental surface emissivity spectra retrieved from IASI observations
- 4.4 Eva Borbas Recent updates of the UW/CIMSS high spectral resolution global land surface infrared emissivity database

11.45-13.15 LUNCH (including poster preparation)

13.15-14.00

Poster session B (including refreshments from 14:30)

15.00-17.00 ITSC-15 Action items presented by ITSC-15 WG co-chairs (10 minutes each)

Moderators: Allen Huang and Stephen English

RT WG (Louis Garand, Paul van Delst)

Climate WG (Jorg Schulz, Peter Thorne)

NWP WG (John Derber, Godelieve Deblonde)

Advanced sounder WG (Bill Smith, Andrew Collard)
International and future systems (Jerome Lafeuille, John Eyre)
Satellite sounder science and products (Tony Reale, Lydie Lavanant)

Technical sub-group reports (5 minutes each)
ATOVS direct broadcast packages
RTTOV
CRTM
Frequency protection

17.00-17.15 Working group formation

Evening: Luau from 19.00

Friday 9 May 2008

8.30-10.15

Session 5: Climate studies

Chairs: Joerg Schulz and Brian Soden

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| 5.1 Brian J. Soden | Decadal Trends in the HIRS Radiance Record |
| 5.2 Viju John | Upper tropospheric humidity data set from operational microwave sounders |
| 5.3 Peter Thorne | What can the GCOS Reference Upper Air Network do for you? |
| 5.4 Lei Shi | Intersatellite Calibrated HIRS Upper Tropospheric Water Vapor |
| 5.5 Marc Schröder | Long-term application and evaluation of IAPP using global radiosonde and CHAMP measurements |
| 5.6 Hartmut H. Aumann | The Frequency of Severe Storms in the Tropical Zone and Global Warming. |
| 5.7 Tom Pagano | AIRS in Atmospheric and Climate Research |

10.15-10.45 BREAK

10.45-11.45

Session 6: Current use in NWP

Chairs: John Eyre and Nancy Baker

3 minute short presentation on current status from NWP centres supporting posters to be presented in special poster session.

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| 6.1 tbd | Current status: a summary of the NWP survey (10 minutes) |
| 6.2 Tony McNally | ECMWF: The Use of satellite data at ECMWF |
| 6.3 Nancy Baker | NRL status report |

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| 6.4 Brett Candy | Met Office: An Update on the Operational Use of Satellite Sounding Data at the Met Office. |
| 6.5 V.S. Prasad | NCMRWF: Impact of NOAA-NESDIS level 1B radiance data on Indian Summer Monsoon at NCMRWF |
| 6.6 John Derber | NCEP: Progress and Plans for the use of radiance data in the NCEP global and regional data assimilation systems. |
| 6.7 Thibaut Montmerle | MeteoFrance: Recent advances in the use of satellite data in the French NWP models |
| 6.8 Godelieve Deblonde | Inclusion of new data types in the Canadian data assimilation system |
| 6.9 Qifeng Lu | CMA: Assimilating ATOVS data in numerical weather prediction model to improve Typhoon prediction in NSMC/CMA |
| 6.10 Kozo Okamoto | JMA: Assimilation of radiance data at JMA: recent developments and prospective plans |
| 6.11 Zhiquan Liu | WRF: Direct Radiance Assimilation for WRF: Implementation and Initial Results |
| 6.12 Martin Stengel | HIRLAM (SMHI): The Assimilation of Clear-Sky Infrared Radiances in the HIRLAM Model |
| 6.13 Bjarne Amstrup | Status of operational ATOVS usage at DMI |
| 6.14 Jose A. Aravequia | Assimilation of AIRS radiances at CPTEC/INPE using the LETKF system |
| 6.15 Roger Randriamampianina | Use of satellite data in ALADIN/HARMONIE-Norway |

11.45-14.00 LUNCH

Including **Poster session on current use of sounding data in NWP**

14.00-15.30

Session 7: Developments in use of sounding data in NWP and Environmental Prediction

Chairs: Dirceu Herdies and John Derber

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| 7.1 Niels Bormann | Recent developments in the use of ATOVS data at ECMWF |
| 7.2 Tony McNally | The 4DVAR assimilation of cloud affected IR radiances |
| 7.3 Bill Bell | A Comparison of IASI water Vapour and SSMIS window channel impacts on NWP analyses and forecasts |
| 7.4 Louis Garand | Impact of combined AIRS and GPS-RO data in the new version of the Canadian global forecast model |
| 7.5 Martin Stengel | The Assimilation of Cloudy Infrared Radiances in the HIRLAM Model: Initial Experiences |
| 7.6 Gang Ma | Impact of VASS radiance of FY3 assimilation on numerical typhoon prediction |

15.30-16.00 BREAK

16.00-17.15

Session 7: Developments in use of sounding data in NWP and Environmental Prediction (continued)

Chairs: Dirceu Herdies and John Derber

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| 7.7 Brett Harris | An Information Based Radiance Data Selection Scheme for Efficient Use of a Multi-Satellite Constellation |
| 7.8 Benjamin Ruston | Use of Hyperspectral IR Data in 4D Assimilation at NRL |
| 7.9 Banghua Yan | Intercomparison of the Cross-Track and Conical Scanning |
| 7.10 Wei Han | Adaptive tuning of satellite radiances observation error in GRAPES |
| 7.11 Thomas Auligne | Impact of AIRS and AMSU-A data in regional data assimilation over the Antarctic. |

17.30-19.00 Working Groups

Evening: free to go to Angra dos Reis?

Saturday 10 May 2008

Working groups 9.00-12.00

12.00-13.00 LUNCH

13.30 Depart for boat tour of islands

18.00 Departure for those going direct to island for dinner

Group dinner on island (at end of tour for those going on the tour)

Sunday 11 May 2008

Day: Various activities, including trip to Paraty.

18.00-20.00 Working groups (or as arranged by WG co-chairs)

Monday 12 May 2008

8.30-9.15

Session 8: Cloud studies

Chairs: Sid Boukabara and Jun Li

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| 8.1 William Blackwell | Neural Network Estimation of Atmospheric Profiles Using AIRS/IASI/AMSU Data in the Presence of Clouds |
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- 8.2 Lydie Lavanant Using AVHRR radiances analysis for retrieving atmospheric profiles with IASI in cloudy conditions
- 8.3 Arlindo Arriaga CO2 Slicing Method for IASI

9.15-10.00

Session 9: Developments in assimilation of sounding data in NWP in cloud regions.

Chairs: Niels Bormann and Michael Uddstrom

- 9.1 R. Montroty Impact of rain-affected microwave data assimilation on the analyses and forecasts of tropical cyclones
- 9.2 Peiming Dong Experiment of the Use of Satellite Microwave Data Affected by Cloud in Numerical Prediction
- 9.3 Min-Jeong Kim The inclusion of cloudy radiances in the NCEP GSI analysis system

10.00-10.30 BREAK

10.30-11.00

Session 9: Developments in assimilation of sounding data in NWP in cloud regions (continued).

Chairs: Niels Bormann and Michael Uddstrom

- 9.4 John Le Marshall Using Clear and Cloudy AIRS Data in Numerical Weather Prediction
- 9.5 Sid Boukabara 1DVAR Pre-processing System for NWP Assimilation

11.00-12.30

Session 10: Other applications of sounder data

Chairs: Lydie Lavanant and Rodrigo Souza

- 10.1 Zhang Jie Effect and Improvement of Aerosol on Temperature Profile from MODIS
- 10.2 A.K. Mitra A Neural Network approach for temperature retrieval from AMSU-A measurements onboard NOAA-15 and NOAA-16 satellites and their applications for the analysis of super cyclone 'Gonu'.
- 10.3 Fuzhong Weng Demonstration of DMSP Special Sensor Microwave Imager and Sounder (SSMIS) Products
- 10.4 Laure Chaumat Potential of CO2 Retrieval from IASI
- 10.5 Filomena Romano Analysis of Arctic clouds by means of hyper-spectral satellite
- 10.6 Tony Reale NOAA Products Integrated Validation Dataset / Database

12.30-14.00 LUNCH

14.00-15.15**Session 10: Other applications of sounder data (continued)****Chairs: Lydie Lavanant and Rodrigo Souza**

- 10.7 Cyril Crevoisier Midtropospheric CO₂ Concentration derived from infrared and microwave sounders. Application to the TOVS, AIRS/AMSU, and IASI/AMSU instruments.
- 10.8 Anton Kaifel NNORSY-GOME Ozone Profile Retrieval Products and Climatology
- 10.9 Ramesh Singh Pronounced Changes in Water Vapor, Ozone and Metrological Parameters Associated with Dust Storms Using MULTI SENSOR Data
- 10.10 Jun Li (for Tim Schmit) Advanced Infrared Sounding System for Future Geostationary Satellites
- 10.11 Raymond Armante Dust aerosol layer altitude from AIRS (01/2003 to 11/2007) and from Calipso (06/2006 to 11/2007): a comparison.

15.15-15.45 BREAK

15.45-17.25**Session 11: Agency status report****Chairs: Jerome Lafeuille and Tom Kleespies**

- 11.1 John Eyre Evolution of the Global Observing System (15 mins)
- 11.2 David Griersmith Status report on the Global RARS initiative (15 mins)
- 11.3 Dieter Klaes EUMETSAT (10 minutes)
- 11.4 Hal Bloom NOAA (10 minutes)
- 11.5 Gang Ma China (10 minutes)
- 11.6 tbc Russia (10 minutes)
- 11.7 Devendra Singh India (10 minutes)
- 11.8 Kozo Okamoto JMA and JAXA (10 minutes)
- 11.9 Luiz Augusto Brazilian Earth Observations Satellites (10 mins)

17.25-17.55**Session 12: Future instruments****Chairs: Pete Wilczynski and Dieter Klaes**

- 12.1 Peter Wilczynski The National Polar-Orbiting Operational Environmental Satellite System (NPOESS) and the NPOESS Preparatory Project (NPP) – Program status and international initiatives status
- 12.2 Stephen Mango The Joint Capabilities and Opportunities of Advanced Sounders on MetOp and NPOESS for NWP and Climate Monitoring In a GEOSS Era

17.55-19.00 Working groups finalise reports

19.00 Churrasco

Tuesday 13 May 2008

8.30-9.30 Working Group reports

Co-chairs: Allen Huang and Stephen English

RT
Climate
NWP

09.30-10.00 BREAK

10.00-11.00 Working group reports

Co-chairs: Allen Huang and Stephen English

Advanced sounders
International
Sounder science and products

11.00-12.00 Future meetings, other events relevant to ITWG

Plans for next meeting and closing remarks

Co-chairs: Allen Huang and Stephen English

12.00-13.00 LUNCH

13.30 Two coaches depart for Rio de Janeiro airport

Poster session A: Software packages, radiative transfer, NWP, environmental prediction.

A01 Fuzhong Weng	Radiative Transfer in Vertically Layered Soil
A02 Stephen Tjemkes	A clear sky radiative transfer model for MTG-IRS
A03 Stephen Tjemkes	Scenes Analysis for the Meteosat Third Generation Infrared Sounder Observations
A04 Fiona Hilton	Comparison of IASI radiances with models from seven operational centres
A05 Allen Larar	IASI Validation Studies using Airborne Field Campaign Data
A06 Stuart Newman	Identification of biases in the modelling of high peaking water vapour channels from IASI
A07 Simone Costa	The water vapor continuum effect on the surface transmitted irradiance at 8 – 12 μ m atmospheric window
A08 Yong Han	The effect of Doppler shift due to Earth's spin on SSMIS UAS channels
A09 Yong Han	A fast radiative transfer model for AMSU-A channel 14 with the inclusion of the Zeeman-splitting effect.
A10 Pascal Brunel	A graphical user interface for RTTOV
A11 Laure Chaumat	4A/OP: An operational fast and accurate radiative transfer model for the infrared
A12 Xiaoqing Li	Forward Simulation for FY-3 MWHS using RTTOV-7
A13 Fanny Duffourg	Convective-scale data assimilation of satellite infrared radiances over the Mediterranean: adaptation of the observation operator to the high-resolution
A14 Stephen English	Potential enhancement of AMSU-A/MHS/ATMS baseline microwave humidity and temperature sounders
A15 Stephen English	A new method for estimating 1D-var B-matrix from 4D-var
A16 Steve Swadley	SSMIS Upper Atmosphere Radiance Assimilation: Preprocessing Requirements and Preliminary Results
A17 Bill Bell	Joint poster with NRL on Upper atmospheric sounder data
A18 Carlos Bastarz	Evaluating the impact of the geopotential height profile data assimilation deriving from the AIRS/AQUA sensor by the CPTEC's RPSAS assimilation model
A19 Jairo Gomes Jr	Impact of ATOVS geopotential heights retrievals over analyses generated by RPSAS.
A20 Roger Randriamampianina	Investigating the assimilation of IASI data in a limited area model

A21 Brett Candy	Use of Regional Retransmission Networks in Global Data Assimilation
A22 Brett Candy	The impact of Polarimetric Wind Vectors on Numerical Weather Prediction
A23 Aurélie Bouchard	Satellite Data Assimilation over Antarctica: The Concordiasi Field Experiment
A24 Yann Michel	Inclusion of time-distributed wind observations in 4D-Var for Tropical Cyclone bogussing.
A25 Yann Michel	Case studies of 4D-Var assimilation of potential vorticity observations derived from image processing.
A26 James Cameron	Impact of variable O3 and CO2 on assimilation of high spectral resolution sounder data
A27 Luiz Sapucci	Impact analysis of assimilation of integrated water vapor estimates from AIRS/AMSU over Amazonian region
A28 Blazej Krzeminski	Towards better usage of AMSU observations over land at ECMWF
A29 Rita Valéria Andreoli	The relative contributions of the various observing systems in the CPTEC global data assimilation/forecast system
A30 Bjarne Armstrup	First experiences with AMSU-B/MHS at DMI
A31 Thomas Pangaud	Assimilation of cloudy AIRS observations in the French global atmospheric model ARPEGE
A32 Qifeng Lu	Data assimilation and use of EOS data in land surface model
A33 Ricardo Todling	The GMAO 4d-Var System
A34 Nancy Baker	NRL: Implementing Radiance Assimilation in NAVDAS-AR: Lessons Learned
A35 Huichun Liu	Evaluation and Assimilation of Cloud Cleared Radiances for AIRS in GEOS-5
A36 Michael Uddstrom	Environmental Forecasting at NIWA: A Progress Report

Poster session B: Instrument characterisation, future sensors, GOS design, trace gas studies, climate studies and sounder science and products.

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| B01 Paolo Antonelli | Fostering a new generation of Remote Sensing Scientists |
| B02 Allen Huang | Processing Package and Remote Sensing Training Workshops for International Direct Broadcast Users |
| B03 Thierry Phulpin | Report on the first International IASI Conference |
| B04 Thierry Phulpin | Synergy between IASI sounding and AVHRR imagery for the processing of IASI data in non-uniform scenes |
| B05 David Tobin | Validation of IASI spectral radiances using aircraft underflight data collected during JAIVEx |
| B06 David Tobin | Principle component analysis of IASI spectra with a focus on non-uniform scene effects on the ILS |
| B07 David Tobin | Evaluation of IASI and AIRS spectral radiances using Simultaneous Nadir Overpasses |
| B08 Zhaohui Cheng | The use of principal component analysis in monitoring IASI radiances and diagnosing climate anomaly |
| B09 Nathalie Selbach | Operational Processing of ATOVS data at the Satellite Application Facility on Climate monitoring |
| B10 Raymond Armante | Validation of level1b/1c LEO instruments in synergy with LEO/GEO companion instruments or in stand alone mode: Application to AIRS/Aqua, IIR/Calipso, IASI/Metop |
| B11 Raymond Armante | Cloud properties from AIRS and evaluation with Calipso |
| B12 Cyril Crevoisier | A quantitative link between CO ₂ emissions from tropical vegetation fires and the daily tropospheric excess (DTE) of CO ₂ seen by NOAA-10 (1987-1991) |
| B13 Clemence Pierangelo | SIFTI : a Static Infrared Fourier Transform Interferometer dedicated to ozone and CO pollution monitoring |
| B14 Alexander Uspensky | Derivation of tropospheric carbon dioxide and methane concentrations in the boreal zone from satellite-based hyper-spectral infrared sounders data |
| B15 Devendra Singh | Total ozone depletion due to tropical cyclones over Indian Ocean |
| B16 Bozena Lapeta | From TOVS to ATOVS based ozone monitoring – implication for the quality and homogeneity |
| B17 Rodrigo Augusto Ferreira de Souza | Preliminary comparisons between the CO retrievals from AIRS and the CO CATT-BRAMS model estimations over the Amazon region during the 2002 dry-to-wet season. |

B18 Kung Hwa Wang	Multi-satellite observation on upwelling after the passage of typhoon Hai-Tang in the southern East China Sea
B19 Filipe Aires	Retrieval of atmospheric water vapour profile using the Megha-Tropiques
B20 Wagner Lima	The use of HSB to derive the integrated water vapor content: an example using the RACCI/LBA experiment
B21 William Blackwell	High-Resolution Passive Millimeter-wave Measurements from Aircraft: Validation of Satellite Observations and Radiative Transfer Modeling
B22 Dieter Klaes	Synergetic Operational Earth observations with Metop-A instruments
B23 Gary Weymouth	Australian Bureau of Meteorology Satellite Data Exchange and Use.
B24 Simon Elliot	Operational dissemination of IASI data using principle component compression.
B25 A. K. Sharma	NOAA/NESDIS Updates on Operational Sounding Data Products and Services
B26 Limin Zhao	Operational Implementation of Integrated Microwave Retrieval System
B27 Lihang Zhou	Enhancements of the AIRS Eigenvector Regression Algorithm
B28 Sid Boukabara	Global Coverage of Total Precipitable Water using the Microwave Integrated Retrieval System (MIRS)
B29 Haibing Sun	CrIS Radiance Simulations in Preparation for Near Real-Time Data Distribution
B30 Xiaolei Zou	Verifying AIRS 1D-Var Retrievals with GPS RO Observations
B31 Tom Kleespies	Serendipitous Characterization of the Microwave Sounding Unit during an Accidental Spacecraft Tumble
B32 Tom Pagano	A Geostationary Microwave Sounder for NASA and NOAA
B33 Louis Garand	A Canadian satellite mission for continuous imaging of the northern latitudes
B34 Pradeep Thapliyal	Atmospheric profiles retrieval from Indian Geostationary Satellite INSAT-3D : Simulation Studies.
B35 Tom Ahtor	Examining the mid winter severe weather outbreak of 7 January 2008 using high resolution data with McIDAS-V
B36 Bill Bellon	(The ITWG website)