

The 12th International TOVS Study Conference (ITSC-XII)—*The Cumberland*, Lorne, Victoria, Australia

DRAFT PROGRAM

Wednesday 27 February 2002

10:00 – 11:00 **Registration**
11:00 – 11:15 **Bus arrival time (to be confirmed from bus)**
11:00 – 11:30 **Deposit clearly tagged luggage with *The Cumberland* front desk staff—they will take luggage to allocated rooms**
11:00 – 11:30 **Coffee available outside main auditorium**

11:30 – 12:30 **Introductory session (chairs Le Marshall and Rochard)**

Welcome
Opening
Presentation and discussion of agenda

12:30 – 14:00 **LUNCH**

14:00 – 15:20 SCIENTIFIC PRESENTATIONS
Session 1a: TOVS/SSM (Chair: Le Marshall)

Deblonde	Comparison of the sounding and imaging capabilities of the SSMIS and AMSU		1a1
Bennartz and Thoss	Precipitation classification and analysis from the Advanced Microwave Sounding Unit (AMSU)		1a2
Li and Weng	Correction of cloud contamination on AMSU measurements: a modeling study		1a3
Reale	ATOVS operational science status and plans		1a4

15:20 – 15:50 **BREAK**

15:50 – 17:50 SCIENTIFIC PRESENTATIONS
Session 1b: ATOVS/SSM(Chair: Rochard)

Stephens and Engelen	CO2 retrievals from IR sounding measurements and its influence on temperature retrievals		1b1
Weng (Fuzhong)	Advances in AMSU non-sounding products and microwave forward modeling		1b2

Wednesday 27 February 2002 (continued)

Session 2a: ATOVS and TOVS in NWP (Chair: Chouinard)

Baker	The application of observation adjoint sensitivity to satellite assimilation problems		2a1
Chevallier, Bauer and Moreau	Potential of the SSM/I rain observations for 4D-Var assimilation		2a2
Derber	The use of radiance data in the NCEP global and regional; data assimilation systems		2a3

19:00 – 19:30

Ice-breaker/ pre-dinner drinks

19:30 -

Dinner

Thursday 28 February 2002

08:00 – 10:00 SCIENTIFIC PRESENTATIONS

Session 2b: ATOVS/TOVS in NWP (Chair: Eyre)

English, Jones, Smith, Hilton and Whyte	ATOVS and SSM/I assimilation at the Met Office		2b1
Kelly, Bauer and Uppala	Improved assimilation of AMSU/HIRS/VTPR radiances in the ECMWF system		2b2
Chouinard, Hallé, Charette and Sarazin	Recent improvements in the use of TOVS satellite radiances in the unified 3D-var system of the Canadian Meteorological Centre		2b3
Gerard, Rabier, Dahoui and Sahlaoui	Use of global ATOVS and SSM/I at Meteo-France		2b4
Harris, Bourke, Paevere and Steinle	Extending 1Dvar/ GASP to 0.1 hPa and the assimilation of 1C AMSU-A data		2b5
Joiner, Frank, da Silva, Bosilovich and Radacovich	Assimilation of cloud- and land-affected TOVS/ATOVS level 1b data at DAO		2b6

10:00 – 10:20 BREAK

10:20 – 12:20 SCIENTIFIC PRESENTATIONS

Session 2c: ATOVS/TOVS in NWP (Chair: Menzel)

Koepken, Kelly and Thepaut	Assimilation of geostationary radiances within the 4Dvar system at ECMWF		2c1
Okamoto	Recent developments in assimilation of ATOVS at JMA		2c2
Prasad, Paliwal, Das Gupta and Rajan	Recent advances in utilization of ATOVS and SSM/I data in the operational global data assimilation of India		2c3

Session 3a: ATOVS/TOVS in climate studies (Chair: Uddstrom)

Bates	Variability in upper tropospheric humidity and water cycle dynamics using TOVS data		3a1
Chedin, Hollingsworth, Scott, Serrar, Crevoisier and Armante	Annual and seasonal variations of atmospheric CO ₂ , N ₂ O and CO concentrations retrieved from NOAA/TOVS satellite observations		3a2
Menzel and Wylie	HIRS observations of a decline in NH winter clouds since 1997		3a3

12:20 – 14:20 LUNCH

Thursday 28 February 2002 (continued)

14:20 – 16:00 SCIENTIFIC PRESENTATIONS

Session 3b: ATOVS/TOVS in climate studies (Chair: Joiner)

Prata, Bates and Jackson	A new method for the retrieval of upper troposphere/ lower stratosphere sulfur dioxide from global long-term TOVS measurements		3b1
Goldberg	Ensuring consistency between AMSU-A climate temperature retrieval products from NOAA-15 and NOAA-16	P	3b2

Session 4a: Preparation for advanced sounders (Chair: Joiner)

Smith, Zhou and Larar	Advanced sounder capabilities – airborne demonstration with NAST-I		4a1
Wolf, Goldberg, Zhou, Qu and Divarkala	A fully operational AIRS processing and distribution system		4a2
Goldberg, McMillin, Wolf, Zhou, Qu and Divakarla	AIRS radiance and geophysical products: methodology and validation		4a3
Huang	Planned hyperspectral imaging and sounding research for Indian Ocean under GIFTS-IOMI project		4a4

16:00 – 16:20 **BREAK**

16:20 – 16:50 WORKING GROUP FORMATION

- Radiative transfer and surface property modelling
- ATOVS/TOVS in climate studies
- ATOVS/TOVS data in NWP
- Advanced Infrared Sounders
- International issues and future systems
- Satellite sounder science and products

16:50 – 17:30 **POSTER INTRODUCTIONS (Chairs: Bates/ Reale)**
(Introductions each 1 minute duration and maximum of one viewgraph.)

17:30 – 19:20 **POSTERS**

19:30 **DINNER**

Friday 1 March 2002

08:00 – 09:30

AGENCY STATUS REPORTS (Chairs: Le Marshall / Rochard)

- **Relations with other bodies:**
- **IRC (Smith, 5 min)**
- **CGMS (Menzel, 5 min)**
- **WMO (Hinsman 5 min)**
- **GRP (Bates)**
- **Reports on issues raised at ITSC - XI**
- **Frequency protection (Rochard, 5 min)**
- **Re-analysis at NCEP (Derber, 5 min)**
- **Re-analysis at ECMWF (Kelly, 5 min)**
- **Re-analysis at GSFC (Joiner, 5 min)**
- **TOVS Pathfinder (Goldberg, 5 min)**
- **Review of actions from ITSC - XI (30 min)**
- **Any other items / discussion**

09:30 – 10:10 SCIENTIFIC PRESENTATIONS

Session 4b: Preparation for advanced sounders (Chair: Kleespies)

McNally, Fourrie, Matricardi, Thepaut and Watts	Progress towards an assimilation strategy for AIRS at ECMWF		4b1
Collard and Saunders	Assimilation of AIRS data at the Met Office		4b2

10:10 – 10:30 BREAK

10:30 – 12:10 SCIENTIFIC PRESENTATIONS

Session 4c: Preparation for advanced sounders (Chair: Hinsman)

Frank, Joiner, Atlas and Stajner	Plans for assimilating AQUA data at NASA's DAO		4c1
Li, Schmidt, Huang and Menzel	Studies of advanced baseline sounder for future Geostationary Environmental Operational Satellite (GOES)		4c2
Rabier and Fourrié	Channel selection for IASI in clear-sky conditions		4c3
Thepaut and Fourrié	Information content and optimal channel selection for AIRS	P	4c4
Lavanant	CMS cloud processing in IASI context		4c5

12:10 – 14:10 LUNCH

Friday 1 March 2002 (continued)

14:10 – 15:55 SCIENTIFIC PRESENTATIONS

Session 5: Future systems – agency plans (Chair: Lavanant)

5-1: Menzel: NOAA's plans for satellites: 2001 and beyond (15 min.)

5-2: Smith: NASA's plans for future sounding systems (15 min.)

5-3: Klaes: EUMETSAT future plans (15 min.)

5-4: Zhang: Considerations on sounding instruments, future Chinese satellites (15 min.)

5-5: Uspensky: Sounding instruments, future Russian meteorological satellites (15 min.)

Session 5a: Future systems (Chair: Lavanant)

Bloom	The Cross-track Infrared and Microwave Sounder (CrIMMS): a sensor suite for operational meteorological; remote sensing		5a1
Chauhan	NPOESS conical microwave imager/sounder: a next-generation sensor		5a2

15:55 – 16:15 BREAK

16:15 – 17:00 SCIENTIFIC PRESENTATIONS

Session 5b: Future systems (Chair: Kelly)

Gasiewski	The Geosynchronous Microwave (GEM) Sounder/Imager		5b1
Glumb and Predina	The Cross-track Infrared Sounder: Sensor design and projected performance		5b2
Phulpin, Cayla, Chalon, Casse, Diebel & Schluessel	IASI on board METOP [®] Project status and scientific preparation		5b3

17:00 – 18:35 Presentation on software packages (Chairs: Rochard/ Le Marshall)

- AAPP and ICI (Klaes/Whyte, Lavanant): Whyte, Labrot and Schraidt: The ATOVS and AVHRR Processing Package: current capability and future evolution
- IAPP (Achter)
- RTATOV (Saunders, Matricardi, Brunel, English and Deblonde: RTTOV-7 – a satellite radiance simulation for the new millenium)
- MODIS/AIRS/AMSU (AMSR) (Huang, Menzel)
- 3I/3 (Armante)

Technical subgroup formation

- AAPP and ICI
- IAPP
- RTATOV
- MODIS/AIRS
- 3I/3R

19:30 DINNER

Evening: Working Group and Technical Working Group meetings

Saturday 2 March 2002

Working Group meetings

Sunday 3 March 2002

Working Group Meetings

17:00 – 18:30 SCIENTIFIC PRESENTATIONS

Session 5c: Future systems (Chair: Goldberg)

Zhang Wenjian	FY-3A: progress and direct broadcast characteristics		5c1
Wilczynski (pres. by Bloom)	The National Polar-Orbiting Operational Environmental Satellite System (NPOESS) Preparatory Project (NPP): Mission concept and status.		5c2
Menzel	NPP instruments and direct broadcast plans		5c3
Coronado	HRD in situ ground system – Bridging technologies between EOS, NPP and the future		5c4
Sprunger, Archer and Johnson	Geostationary sounding: Current and future GOES sounders		5c5

Session 6a: Scientific studies and development: cloud and moisture (Chair: Goldberg)

Prunet and Tournier	Variational cloud decontamination and extension to the component estimation of the IASI measurements		6a1
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Monday 4 March 2002

08:00 – 10:00 SCIENTIFIC PRESENTATIONS

Session 6b: Scientific studies and development – cloud and moisture soundings and applications (Chair: Garand)

Romano and Cuomo	Retrieval of cloud parameters from the new sensor generation satellite multispectral measurements		6b1
Stubenrauch, Raedel, Eddounia, Holz, Scott and Mitchell	Studying cirrus mean effective ice crystal sizes using satellite TIROS-N Operational Vertical Sounder (TOVS) observations		6b2
Garand and Wagner	Assimilation of GOES imager channels at MSC		6b3
Andrews, Oliver, Zheng and Uddstrom	The impact of data assimilation on a mesoscale model of the New Zealand region		6b4
Joo	The usage of ATOVS in Korea Meteorological Administration		6b5
Randriamampianina and Rabier	Regional use of locally received ATOVS radiances in NWP		6b6
Silvestre Espinoza	Comparison of error analysis in 3D-Var, for assimilation of radiances and retrievals using NOAA-14		6b7
Tingwell, Harris and Bourke	ATOVS 1D-Var retrieval in the Australian region LAPS data assimilation and prediction system		6b8

10:00 – 10:25 BREAK

10:25 – 12:10 SCIENTIFIC PRESENTATIONS

Session 6c; Scientific studies and development: soundings and applications (Chair: Zhang Wenjian)

Schyberg, Amstrup, Gustaffson, Jarvinen, Landelius, Lindskog	Use of ATOVS in HIRLAM 3-D Var		6c1
Bower, Lynch and Knuteson	The validation of land surface thermodynamic properties retrieved by atmospheric sounders		6c2
Monnier, Lavanant, Brunel, Labrot and Rochard	Temperature, humidity and surface emissivity retrieval experiments with IASI simulated data		6c3
Le Marshall et al.	GIFTS IOMI-High spectral, temporal and spatial resolution data collection and application		6c4
Plokhenko and Menzel	Analysis of NAST-I measurement characteristics		6c5
Glumb, Predina, Lietzke and Xu Liu	EDR algorithms for the Cross-track Infrared Sounder		6c6
Fourrie	Use of advanced infrared sounders in cloudy conditions		6c7

Monday 4 March 2002 (continued)

12:05 – 14:05 LUNCH

14:05 – 15:50 SCIENTIFIC PRESENTATIONS

Session 6d Scientific studies and developments – development, training and data (Chair: Saunders)

Mukabana	Towards an alternative technique in upper air monitoring in Kenya (20 minutes).		6d1
Wilson	The Virtual Laboratory for Satellite Meteorology: An Opportunity for collaborative education and training		6d2
Overton	The National Polar-Orbiting Operational Environmental Satellite System (NPOESS): Access to NPOESS data		6d3
Tabor	Future data processing at the Information Processing Division (IPD) of the National Environmental Satellite, Data and Information Service (NESDIS)		6d4
Tournier, Blumstein and Cayla	IASI Level 0 and 1 processing algorithms description		6d5
Singh, Bhatia, Mukherjee and Sant Prasad	Validation of atmospheric temperature profiles derived using neural network approach from AMSU-A measurements on board NOAA-15 and NOAA-16 satellites and their applications for tropical cyclone analysis		6d6
Kaifel and Muller	NOAA-ATOVS 23-year total column ozone product retrieved by neural network technique		6d7

15:50 – 16:15 BREAK

16:15 – 17:30 SCIENTIFIC STUDIES

Session 6e: Scientific studies and developments – radiative transfer (Chair: Bates)

Armante, Scott, Chedin, Jacquinet-Husson, Marchand, Montandon, Aires	Validation processes and results for the inverse and forward models related to IASI/ AMSUs/METOP observations		6e1
Jacquinet-Husson, Scott, Chedin and Chursin	The GEISA spectroscopic database system revisited for IASI direct radiative transfer modelling		6e2
Matricardi and Chevallier	An improved general fast radiative transfer model for the assimilation of radiance observations		6e3

Monday 4 March 2002 (continued)

McMillin, Kleespies and Xiong	Rapid transmittance studies at NESDIS		6e4
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19:30 CONFERENCE DINNER

Tuesday 5 March 2002

08:00 – 09:15 SCIENTIFIC PRESENTATIONS

Session 6e: Scientific studies: Developments in radiative transfer (Chair: Thepaut)

Sherlock, Collard and Saunders	Development and validation of Gastropod, a fast radiative transfer operator for the advanced infrared sounders		6e1
Turner	Revisiting the downward emission term of the radiative transfer model		6e2
van Delst	Upgraded radiative transfer model status at NCEP/EMC		6e3
Kleespies	The merger of OPTRAN and RTTOV: the best of both worlds		6e4

09:15 – 10:00 ITWG PLENARY: Working Group reports

10:00 – 10:25 BREAK

10:25 – 12:15

Working Group reports

Technical subgroup reports

Executive summary

Major recommendations and actions

Other business

12:30 LUNCH

13:00 Assemble for coach departure

13:30 Coach departs for Melbourne

15:30 – 16:00 Coach arrives in central Melbourne

Poster presentations

Achtor, Feltz, Woolf and Howell	Validation of IAPP retrievals using DOE ARM site observations	P	
Achtor, Li and Woolf	Recent advances to the International ATOVS Processing Package	P	
Ahn	Implementation of ATOVS processing package and its validation in Korea	P	
Atkinson and Saunders	Moonlight in AMSU	P	
Borbas, Achtor, Lavanant, Menzel and Woolf	Monitoring and validation of IAPP and ICI products over Madison acquisition area	P	
Borbas, Menzel and Li	The effect of GPS radio occultation data on radiometric profile retrievals	P	
Brunel	HIRS calibration: Comparison between local AAPP and global NESDIS methods	P	
Carvalho, Lavanant, Ferreira and Ramos	Analysis of temperature and moisture profiles over Brazil using the ICI inversion model	P	
Chedin, Serrar, Hollingsworth, Armante and Scott	Annual and seasonal variations of CO ₂ , CO and N ₂ O observed by NOAA operational satellites	P	
Chevallier	Sampled databases of 60-level atmospheric profiles from the ECMWF analyses	P	
Chevallier and Janiskova	Potential of the ATOVS cloud observations for 4D-Var assimilation	P	
Deblonde and English	Stand-alone 1D-Var scheme for the SSMIS, SSM/I and AMSU instruments	P	
Dodge and Coronado	Weather and climate information available from EOS and NPP direct broadcasts	P	
Delhinger and Lavanant	ICI3 over West Africa	P	
Dybbroe, Brunel, Marsouin and Thoss	Accurate real-time navigation of AVHRR data at high latitudes	P	
Dyras and Serafin-Rek	Precipitation estimation from NOAA/AMSU data	P	
English and Weng	Methods for processing cloudy AMSU observations	P	
Franquet, Scott, Chedin, Armante and Eymard	Radiative transfer in the SAPHIR and AMSU channels in the perspective of water vapor profiles retrieval	P	
Gasiewski	Interference mitigation in passive microwave radiometry	P	
Gu, Gao and Zhu and Goldberg	Remote sensing land surface wetness by the use of TRMM/TMI microwave data	P	
Grant	ASTRIUM project for future microwaves	P	
Huang	Recent progress and addition of International MODIS and AIRS Processing Package	P	
John, Buehler and Mashrab	Validation of a new radiative transfer model for AMSU	P	
Jones, Renshaw, Chalcraft, Anderson and English	ATOVS assimilation in the Met Office UK mesoscale model	P	
Landelius and Gustafsson	AMSU-A background errors in HIRLAM 3-D Var	P	
Li, Yang, Menzel and Huang	Application of wavelet analysis on stripping of MODIS multi-spectral band infrared radiance measurements	P	
McMillin and Ding	Validation studies at NESDIS	P	

McMillin, Goldberg and Zhoa	Carbon dioxide retrievals from the TOVS series of satellites	P	
McNally and Watts	A cloud detection approach for AIRS radiance assimilation	P	
Montandon, Chedin, Armante, Scott and Aires	Hyperfast high spectral resolution radiance simulation with a multi-layer perceptron. Application to AMSU.	P	
Poulin	NPOESS CrIS raw data (level 0) to sensor data (level 1b) processing	P	
Predina	Impact of channel spectral shape errors on high resolution infrared atmospheric sounders	P	
Predina	Cross-track Infrared Sounder (CrIS) raw data records (RDRs)	P	
Puschell	Japanese Advanced Meteorological Imager: A next generation GEO imager for MTSAT-1R	P	
Reale	Global radiosonde and in situ upper air observations for polar satellite validation	P	
Rochard	Frequency protection	P	
Sherlock	Fast radiative transfer model prediction of water vapour absorption: results from recent studies examining predictor selection and regression profile set dependencies	P	
Silvestre Espinoza, Carvalho and Cintra	Impact of ATOVS sounding in analysis in South America	P	
Sreerekha, Buehler, Emde and John	Using a new radiative transfer model to estimate the effect of cirrus clouds on AMSU-B radiances	P	
Tournier	IASI level 2: NOVELTIS contribution: Spectral correction of IASI spectra due to non-homogeneous scenes and scenes decomposition into homogeneous components in an IASI FOV (cloud clearing).	P	
Wagneur, Chouinard and St James	ATOVS in the Canadian regional assimilation system	P	
Wang (Hongqi)	Potential application of advanced infrared sounders on earthquake prediction and energy resources exploration	P	
Wu, Zhang, Lavanant and Brunel	The status of AAPP/ICI at NSMC	P	
Zhao, Wang and Wang	Land surface temperature determination from GMS5/VISSR data with some different retrieval methods	P	