



Beijing, China

Activities of the International (A)TOVS Working Group (ITWG)

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Participants at ITSC-14 in Beijing, China in May 2005

The ITWG MISSION

The International TOVS Working Group (ITWG) is convened as a sub-group of the Radiation Commission of the International Association of Meteorology and Atmospheric Sciences (IAMAS). ITWG organizes the International TOVS Study Conferences (ITSC), which have met every 18-24 months since 1983. Through this forum, operational and research users of TIROS Operational Vertical Sounder (TOVS) and Advanced TOVS (ATOVS) data from the NOAA series of polar orbiting satellites and other atmospheric sounding data have exchanged information on methods for extracting information from these data on atmospheric temperature, moisture and other fields, and on the impact of these data in numerical weather prediction and in climate studies. The ITWG meetings also result in recommendations to guide the directions of future research and to influence relevant programs of WMO and satellite provider agencies (e.g. NASA, NESDIS, EUMETSAT, NSMC, JMA).

An important part of the Group's work has been to foster and participate in the generation of software to be shared throughout the community to enable use to be made of these data for operations and research. The Group also has an important education and training role through the WMO.



Queenstown, New Zealand

Iols Austria

Airlie, USA

Igls. Austria

Igls, Austria

Igls, Austria

Madison, USA

Toulouse, France

April 1995

May 1991

July 1989

March 1988

August 1986

February 1985

August 1983

February 1993

ITSC-VIII

ITSC-VII

ITSC-VI

ITSC-V

ITSC-IV

ITSC-III

ITSC-II

ITSC-I

in numerical weather prediction 2. Satellite Sounder Science and Products - Promoting the development and utilization of meteorological techniques and products from operational and research satellites in weather and climate applications 3. Radiative Transfer and Surface Property Modeling - Fostering the development of radiative transfer and surface models for ATOVS applications 4. Use of TOVS/ATOVS Data in Climate Studies - Studies applying the 30 year climate database from the NOAA polar sounder 5. Advanced Sounders - Planning and recommendations in preparation for future instrumentation 6. International Issues and Future Systems - Cooperative actions with the international weather satellite community on issues involving polar remote sensing Paper 6.6: Comparison of Simulated Radiances, Jacobians, and Information Content for the MHS and the AMSU-B Tom Kleespies, Presenter Improvement of AMSU-B and MHS information over ECMWF covariances for the US Standard Atmosphere. Instrument Unique NEDT Suggests improvement due to NED improvement due to NED 0.5 1.0 feture error g/Kg Both use MHS NEDT

ITWG - Special Focus Working Groups

1. Use of TOVS/ATOVS in Data Assimilation and Numerical Weather Prediction - Operational and research applications of low earth orbit (LEO) sounder data



00 0.08 0.16 0.24 0.32 0.4 0.0 0.2 0.4 0.6 0.8 1.0 1000 1450 1900 2350 2800 3250 (Permgelo et al., ACP, 2004)

Paper 3.1: Using 22 Years of HIRS Observations To Infer Global Cloud Cover Trends Paul Menzel, Presenter

HIRS Cloud Observations since 1979

How Cloudy is the Earth?



All Clouds High Clouds Land Sea Both Land Sea Both ISCCP 56 % 70 % 25 % 20 % HIRS Pathfinder 71 77 34 32 Surface Reports 52 54 43 65 SAGE 73 60 GLAS 66 80 34 31 *GLAS High Cloud Frequencies adjusted because HIRS reported more hig clouds during the GLAS period than its 21 year average

GLAS 22 Feb – 28 Mar 2003, HIRS 1979 – 2001, ISCCP 1983 – 2001, SAGE 1985-89, Surface Reports 1980-89, CLAVR 1982 - 2004 ISCCP reports -15% less cloud than HIRS because it misses thin cirrus. HIRS and GLAS report nearly the same high cloud frequencies. HIRS reports more clouds over land than GLAS probably because GLAS sees holes in low cumulus below the resolution of HIRS.

ITWG web site:- http://cimss.ssec.wisc.edu/itwg/

International TOVS Study Conference, 15th, ITSC-15, Maratea, Italy, 4-10 October 2006 Madison, WI, University of Wisconsin-Madison, Space Science and Engineering Center, Cooperative Institute for Meteorological Satellite Studies, 2006.