REPORT TO THE BOARD OF DIRECTORS
COOPERATIVE INSTITUTE FOR METEOROLOGICAL SATELLITE STUDIES (CIMSS)
22 JUNE 2005

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AGENDA

CIMSS
BOARD OF DIRECTORS MEETING

Wednesday, 22 June 2005
9:00 am - 3:30 pm, Room 351

9:00 am	Welcome and Agenda Review (Ackerman)
9:15 am	UW Research and Graduate School Update (Cadwallader)
9:30 am	SSEC Update (Revercomb/Achtor)
9:45 am	Summary of CIMSS 5-Year Review (Ackerman)
10:00 am	NOAA Priorities (Withee/Bayler)
10:15 am	Break
10:30 am	NASA HQ/Goddard Priorities (Asrar & Einaudi/Kaye)
10:45 am	NASA Langley Priorities (Vann)
11:00 am	AOS Priorities (Martin/Petty)
11:15 am	Short Presentations on Specific Programs Hyperspectral Science at CIMSS (Allen Huang) Direct Broadcast at CIMSS (Liam Gumley)
12:15 pm	Lunch
2:00 pm	CIMSS Activity Review (Ackerman) (rm 811)
3:00 pm	Discussion, action items and wrap-up (rm 351)
3:30 pm	Adjournment

CIMSS BOARD OF DIRECTORS
June 2005

Martin Cadwallader, Chair
Dean, UW Graduate School

Steven A. Ackerman
Director, CIMSS

Henry E. Revercomb
Director, Space Science and Engineering Center, UW

Jonathan Martin
Chair, Department of Atmospheric and Oceanic Sciences, UW

Greg Withee
Assistant Administrator for Satellite and Information Services, NOAA/NESDIS

Albert Powell
Acting Director, Office of Research and Applications, NOAA/NESDIS

Jeff Key
Leader, Advanced Satellite Products Team, NOAA/NESDIS

Ghassem Asrar
Science Deputy Associate Administrator, NASA

Franco Einaudi
Director, Earth Sciences Directorate, NASA Goddard Space Flight Center

Lelia Vann
Acting Director, Science Directorate, NASA Langley Research Center

Invited Representatives:

Terry Millar
Associate Dean for Physical Sciences, Graduate School, University of Wisconsin—Madison

Jack Kaye
Director, Research Division, NASA Office of Earth Science, NASA Headquarters

Eric Bayler
Chief, Oceanographic Research and Development, NOAA/NESDIS/ORA/ORAD

Grant Petty
Professor, Department of Atmospheric and Oceanic Sciences, University of Wisconsin—Madison

Allen Huang
CIMSS Science Council

Thomas Achtor
Executive Director-Science, SSEC/CIMSS

Fred Best
Executive Director-Technology, SSEC

John Roberts
Executive Director-Administration, SSEC

CIMSS SCIENTIFIC ADVISORY COUNCIL
June 2005

Steven Ackerman	Director, CIMSS
Allen Huang	Senior Scientist, CIMSS
Chris Velden	Assistant Scientist, CIMSS
John Norman	Professor, UW Department of Atmospheric and Oceanic Sciences
Jon Martin	Professor, UW Department of Atmospheric and Oceanic Sciences
Graeme Stephens	Professor, Department of Atmospheric Science, Colorado State Univ.
Bob Ellingson	Professor, Department of Meteorology, Florida State University
Arnold Gruber	Leader, Hydrology Team, NOAA/NESDIS/ORA
Fran Holt	Chief, Atmospheric Research and Appl. Div., NOAA/NESDIS/ORA
Michael King	EOS Senior Project Scientist, NASA Goddard Space Flight Center
Pat Minnis	Senior Research Scientist, NASA Langley Research Center

An Overview of the Cooperative Institute for Meteorological Satellite Studies (CIMSS) at the University of Wisconsin-Madison

CIMSS was established in 1980 to formalize and support cooperative research between the National Oceanic and Atmospheric Administration's (NOAA) National Environmental Satellite, Data, and Information Service (NESDIS) and the University of Wisconsin-Madison's Space Science and Engineering Center. Sponsorship and membership of the Institute was expanded to include the National Aeronautics and Space Administration (NASA) in 1989.

During the 1980s, a need emerged for joint federal - university research centers to support the NOAA weather research program. CIMSS was established to focus on the development and testing of the operational utility of new weather satellite observing systems to improve weather analysis and forecasts. Federally sponsored university institutes such as CIMSS have proved to be very cost effective organizations for conducting research and development programs.

CIMSS develops and successfully implements techniques and products for using geostationary and polar orbiting weather satellite visible, thermal and microwave radiation observations to improve forecasts of severe storms, including tornadoes and hurricanes. CIMSS plays a major role in the transfer of new technology into operational practice.

CIMSS plays a major role in instrument design and testing, and related software development, for improved space-based measurements of the earth's atmosphere. CIMSS is very active in national and international field programs, testing new instrumentation, data processing systems and assessing the geophysical utility of measurements.

Current research also focuses on the development and testing of computer-based analysis and forecast techniques that use observations from existing and planned spacecraft and ground-based weather observing systems as part of a national program to greatly improve weather forecast capabilities for the next decade. The optimal use of satellite data in climate and global change studies has become another essential part of the CIMSS mission.

CIMSS serves as an international center for research on the interpretation and uses of operational and experimental satellite observations and remote sensing data acquired from aircraft and the ground. These data are applied to a wide variety of atmospheric and oceanographic studies and evaluated for their potential operational utility. CIMSS international role is further strengthened through its visiting scientist program that hosts sabbaticals for several foreign scholars each year.

CIMSS' relationship with the UW-Madison Department of Atmospheric and Oceanic Sciences provides graduate student research support to more than ten students per year. The

education/research center link provides an excellent path for young scientists entering geophysical fields.

Visit the CIMSS WWW Home Page at **http://cimss.ssec.wisc.edu**

Organizational Structure within the University of Wisconsin System

Research institutions with the University of Wisconsin system are administered through the Graduate School. The Space Science and Engineering Center (SSEC) is a research institution employing roughly 200 scientists, engineers, programmers and support staff. The SSEC program includes development of the Man-computer Interactive Data Access System (McIDAS), development and construction of spacecraft instrumentation and scientific investigations of earth and other planetary environmental systems. Within the SSEC, the Cooperative Institute for Meteorological Satellite Systems (CIMSS) is a research arm conducting scientific investigation from passive remote sensing systems for meteorological and surface-based applications.

CIMSS PERSONNEL HISTORY

CIMSS PERSONNEL PIE CHART

CIMSS PERSONNEL SUMMARY: (114 Associates) **June 2005**

CIMSS ADMINISTRATION AND TECHNICAL SUPPORT (4):	Steve Ackerman	Director
	Tom Achtor	Executive Director
	Maria Vasys	Program Assistant III
	Leanne Avila	Editor/Webmaster

UNIVERSITY PRINCIPAL INVESTIGATORS: (16)

(Steve Ackerman	Professor, AOS	Clouds / Aerosols)
Ralf Bennartz	Professor, AOS	Microwave / Radiative Transfer
Tom Greenwald	Assistant Scientist	Microwave / Data Assimilation
Liam Gumley	Associate Instrument Innovator	Direct Broadcast and Data Analysis
Allen Huang	Associate Scientist	Retrieval Science / Hyperspectral
Bormin Huang	Researcher	Data Compression / Retrieval Science
Bob Knuteson	Assistant Scientist	Hyperspectral Instruments / Data Analysis
Jim Kossin	Associate Researcher	Tropical Cyclones
Jun Li	Associate Researcher	Retrieval Science / Hyperspectral
Ralph Petersen	Senior Scientist	NWP / Nowcasting
Grant Petty	Professor, AOS	Microwave / Rainfall
Elaine Prins	Contracting Scientist	Biomass Burning / Aerosols
Henry Revercomb	Senior Scientist	Hyperspectral Instruments/Data Analysis
Bill Smith Sr.	Senior Scientist	Hyperspectral Instruments/Data Analysis
Dave Tobin	Associate Researcher	Radiative Transfer
Chris Velden	Assistant Scientist	Satellite Winds / Tropical Cyclones
Tony Wimmers	Associate Researcher	Turbulence / Aerosols

NOAA PERSONNEL: (7)	Paul Menzel	NESDIS Senior Scientist
	Jeff Key	ASPB Team Leader
	Robert Aune	
	Andrew Heidinger	
	Tim Schmit	
	Gary Wade	
	Robert Rabin	National Severe Storms Lab

NASA PERSONNEL (1)	Bryan Baum	

UNIVERSITY SCIENTIFIC AND PROGRAMMING STAFF (51)	Alok Ahuja	Research Intern
	Scott Bachmeier	Associate Researcher
	Kevin Baggett	Assoc. Inst. Tech.
	Kris Bedka	Research Intern
	Sarah Bedka	Assistant Researcher
	Howard Berger	Assistant Researcher
	Eva Borbas	Associate Researcher
	Jason Brunner	Research Intern
	Ralph Dedecker	Senior Instrument Technician
	George Diak	Emeritus Scientist
	Steve Dutcher	Assistant Researcher
	Joleen Feltz	Senior Research Specialist
	Wayne Feltz	Assistant Researcher

CIMSS PERSONNEL SUMMARY: (114 Associates) **June 2005**

UNIVERSITY SCIENTIFIC AND PROGRAMMING STAFF (cont'd)	Richard Frey	Associate Researcher
	Ray Garcia	Instrument Technician
	Mat Gunshor	Senior Research Specialist
	Denny Hackel	Associate Instrumentation Tech
	Pat Heck	Researcher
	Ben Howell	Researcher
	Jun Huang	Assistant Researcher
	Tommy Jasmin	Associate Instrumentation Tech
	Dan LaPorte	Associate Researcher
	Szu Chia Lee	Assistant Researcher
	Jinlong Li	Associate Researcher
	Chian-Yi Liu	Assistant Researcher
	Chris Moeller	Researcher
	Christine Molling	Assistant Researcher
	Leslie Moy	Associate Researcher
	Fred Nagle	Emeritus Researcher
	Jim Nelson	Researcher
	Tim Olander	Assistant Researcher
	Erik Olson	Assistant Researcher
	Jason Otkin	Assistant Researcher
	Michael Pavolonis	Assistant Researcher
	Youri Plokhenko	Researcher
	Tom Rink	Associate Instrumentation Tech
	Dave Santek	Instrument Innovator
	Chris Schmidt	Assistant Researcher
	Tony Schreiner	Researcher
	Suzanne Seemann	Assistant Researcher
	Maciek Sumga-Otto	Instrument Technician
	Dave Stettner	Assistant Researcher
	Kathy Strabala	Researcher
	William Straka	Assistant Researcher
	Ken Vinson	Assistant Instrument Technician
	Xuanji Wang	Assistant Researcher
	Steve Wanzong	Assistant Researcher
	Tom Whittaker	Researcher
	Hal Woolf	Researcher
	Tom Zapotocny	Associate Scientist
	Hong Zhang	Assistant Researcher
VISITING SCIENTISTS (3)	Pradeep Thapliyal	ISRO, Bangalore, India
	Xuebao Wu	NSMC, Beijing, China
	Peng Zhang	NSMC, Beijing, China
POST DOCTORS: (1)	Shaima Nasiri	Post Doc

CIMSS PERSONNEL SUMMARY: (114 Associates) **June 2005**

STAFF AT OTHER SITES: (6)	Paolo Antonelli	Associate Researcher
	Jim Davies	Curtin U Contractor
	Dan DeSlover	LaRC/Associate Researcher
	Derrick Herndon	Air Force Weather Agency
	Jim Jung	NSC/ Associate Researcher
	Paul vanDelst	NSC/Researcher

GRADUATE STUDENTS: (21)

Student	Degree	Science Advisor	Academic Advisor
Evan Amato	M.S	Heidinger	Ackerman
Lori Borg	Ph.D.	Bennartz	Bennartz
Richard Dworak	M.S.	Key	Ackerman
Jay Hoffman	M.S.	Prins	Ackerman
Robert Holz	Ph.D.	Ackerman	Ackerman
Wie Huang	Ph.D.	Petty	Petty
Mark Kulie	Ph.D.	Bennartz	Bennartz
Matthew Lazzara	Ph.D.	Ackerman	Ackerman
Zhenglong Li	Ph.D.	Menzel	Ackerman
Yinghui Liu	Ph.D.	Key	Ackerman
Brent Maddux	M.S.	Ackerman	Ackerman
Mike Richards	M.S.	Ackerman	Feltz
Dave Santek	Ph.D.	Ackerman	Ackerman
Bill Smith Jr.	Ph.D.	Ackerman	Ackerman
Jessica Staude	M.S.	Lazzara	Ackerman
Nathan Uhlenbrock	M.S.	Schmit	Ackerman
Robert Wacker	Ph.D.	Velden	Ackerman
Tim Wagner	M.S.	Feltz	Ackerman
Fang Wang	M.S.	Li	Ackerman
Longtao Wu	Ph.D.	Petty	Petty
Chunhua Yao	Ph.D.	Li	Ackerman

UNDERGRADUATE STUDENT EMPLOYEES (4)	Bruce Flynn
	Alex Harrington
	Jelani Harris
	Lynn Kjernes

CIMSS Graduate Students Research Topics

Aschbrenner, Ryan (Petty) – graduated 5/04: "Development and Intercomparison of Passive Microwave Rain Rate Retrieval Algorithms"

Borg, Lori (Bennartz) – Aerosol indirect effect and comparing AMSR-E and MODIS products

Brunner, Jason (Ackerman) – graduated 12/04: "A Quantitative Analysis of the Enhanced-V Feature in Relation to Severe Weather"

Dworak, Richard (Key) – climatology of the winds over the polar regions using AVHRR

Evan, Amato (Ackerman) – graduated 5/04: "Dust detection with AVHRR and application to wintertime Saharan dust conditions"

Hoffman, Jay (Ackerman) – Working with the Biomass Burning group working on a comparison of GOES and MODIS fire products focusing on collocated fires and on fire radiative power (FRP)

Holz, Robert (Ackerman) – Hyperspectral cloud top retrieval, lidar, colocation

Huang, Wei (Petty) - The physics involved in discrete dipole computation. Investigating the scattering and absorption of different shape ice particles by discrete dipole approximation. Developing new codes for our specialized case. Also, by integrating the radiation transfer properties of the ice particles calculated from DDA, try to contribute to the simulated testbed for satellite algorithm testing.

Kulie, Mark (Bennartz) – Research activities have focused on AMSR-E validation of winter precipitation at high latitudes using combined ground-based radar and passive microwave data

Lazzara, Matt (Ackerman) – Antarctic fog climatology and meteorology

Li, Zhenglong (Ackerman) – a) Current and future environmental satellite imagers on scene classification. Done with a paper submitted to JAM
b) The current GOES sounder on retrieval of temperature and water vapor (ongoing)

Liu, Yinghui (Key) – Role of heat and moisture advection in polar cloud evolution

Maddux, Brent (Ackerman) – Analysis and validation of MODIS Level-3 cloud properties, improving the current MODIS CO2 slicing algorithm, and global and regional MODIS cloud fraction and amount trends

McGarragh, Gregory (Ackerman) – graduated 8/04: The Effect of Multilayered Clouds on Cloud Pressure Retrievals in Near-Global MODIS Data

Mores, Michael (Ackerman) – graduated 12/04: "A Study of Cloud Fraction as a Function of Optical Depth Using University of Wisconsin Lidar Data"

Nasiri, Shaima (Ackerman) – graduated 12/04: "Passive remote sensing of overlapping clouds"

Richards, Michael (Ackerman) – Assessment of volcanic ash satellite-derived cloud top heights

Santek, Dave (Ackerman) – The impact of satellite-derived winds from MODIS on global model forecasts

Smith, Jr., William (Ackerman) – Satellite-derived aerosol and radiative flux validation for the EOS; satellite-derived icing diagnoses for aviation safety; improved specification of cloud drop size distributions for satellite remote sensing applications; evaluation of NWP cloud hydrometeor output; comparisons with satellite-derived cloud macro- and micro-physical properties.

Staude, Jessica (Ackerman) – Antarctic satellite climatology

Uhlenbrock, Nathan (Ackerman) – "The Use of MODIS Water Vapor Imagery, Model Output, and Pilot Reports to Diagnose Turbulent Mountain Waves"

Wacker, Robert (Petty) – graduates 8/05: "Correcting for Precipitation Effects in Satellite-Based Passive Microwave Tropical Cyclone Intensity Estimates"

Wagner, Timothy (Ackerman) – Severe storm climatology of the Great Plains using ground-based remotely sensed observations. Previous severe storm climatologies used weather balloons to determine the atmospheric conditions associated with various types of severe weather. By using the Atmospheric Emitted Radiance Interferometer (AERI) coupled with wind profilers, it is possible to obtain the same observation as a wind balloon, except with a temporal resolution of 10 minutes.

Wang, Fang (Ackerman) – working on the GOES-R Hyperspectral Environmental Suite (HES) trade-off studies (MS thesis topic: Trade-off study on GOES-R HES)

Wang, Xuanji (Key) – graduated 12/03: "Arctic Climate Characteristics and Recent Trends from Space"

Wu, Longtao (Petty) – Compare results of the rain-rate retrieved from AMeDAS Radar data with AMSR to revise rain-rate algorithm over ocean

Yao, Chunhua (Ackerman) – AHRSL-MMCR particle size retrievals

GRAPHIC ON CIMSS SPENDING HISTORY

GRAPHIC ON SPENDING HISTORY BY AGENCY

GRAPHIC ON FY04 SPENDING BY AGENCY

GRAPHIC ON FY05 SPENDING BY AGENCY

CIMSS GRANT AND CONTRACT SUMMARY

Listed by Agency
June 2005

NOAA Programs	Lead	2005 Funds	CD Index

Continuing Funding

CIMSS Base **Ackerman, Achtor** **$225K**
Support for CIMSS infrastructure, including administrative staff, visiting scientists, and students; to conduct workshops and seminars and to support small seed projects.

GIMPAP Programs

Retrieval Science **Li** **$250K** **37**
Evaluate the current GOES sounder measurements and products. Investigate the improved current GOES Sounder products from noise-filtered high quality radiance data by taking into account the time continuity and high spatial resolution characteristics.

Winds R&D **Velden** **$50K** **41**
Conduct basic research on the GOES automated wind algorithm. Modify code through science advances and make these advances available to NESDIS for operational implementation considerations.

Hurricane Applications **Velden, Olander** **$50K** **39**
Conduct basic research on GOES applications to hurricanes. Focus is on the continued development of the Advanced Dvorak Technique (ADT), and studies on satellite observations of the Saharan Air Layer (SAL) and its effects on tropical cyclones.

Biomass Burning **Schmidt, Prins** **$40K** **40**
Focusing on current and future global geostationary satellites to monitor fires for applications in hazards, global change research, land-use/land-cover change analyses, emissions monitoring, and air quality.

Intercalibration **Gunshor** **$25K** **36**
The experimental side of intercalibration: Research and development of new methods and tools, adding new instruments and new bands, and publication/presentation of the results. CIMSS works with both domestic and international scientists as new instruments (such as GOES-N, FY-2C, and MTSAT-1R) are developed and launched.

NOAA Outreach **Achtor, Mooney** **$20K** **38**
Develop a course in Satellite Meteorology for middle and high school classrooms. Engage teachers to incorporate the material into their classroom curriculum. Also, conduct Summer Workshops for teachers and for high school students in earth sciences.

Polar and Geostationary Programs

Polar Winds **Key, Santek** **$100K** **8**
Generate wind vectors over the polar regions from polar-orbiting satellites. Of primary interest is the MODIS instrument on NASA's Terra and Aqua satellites. Goal is to provide an experimental wind product that can be used in numerical weather prediction systems.

CLAVR **Heidinger** **$60K** **47**
Develop new and validate current CLAVR-x cloud products using experience developed with the MODIS and GOES programs. The Clouds from AVHRR Extended (CLAVR-x) project is NOAA's operational AVHRR cloud processing system. To date, CIMSS efforts have led to a new cloud typing (including multi-layer) and split-window based cloud temperature/emissivity estimation approaches.

Spectral Response **Schmit, Gunshor** **$55K**
Prepare for quantitative use of both the GOES Sounder and Imager Spectral Response Functions through the generation of transmittance coefficient files. This project addresses activities necessary to prepare for the eventual use of that satellite data and eventual generation of research products. This work is a required function for each new set of instruments, these files should be updated as improved input files (line-by-line models, etc) become available.

Geo Winds Applications **Velden** **$50K**
Conduct research on improving the automated winds algorithm through validation studies, and help with the transition of advances to NESDIS ORA.

SFOV Algorithm Maintenance **Nelson** **$50K** **49**
Ensure that the GOES Sounder Single Field of View (SFOV) temperature/moisture/clouds retrieval algorithm is and continues to function as optimally as possible. Synchronize the SFOV algorithm between NESDIS/ORA/FPDT and CIMSS, making sure both are consistent in terms of software and ancillary files.

QA & Maintenance **Nelson** **$50K** **48**
Provide computer software and hardware support that will result in continuous production of scientifically robust research products derived from GOES Imager and Sounder data.

Wild Fire **Schmidt, Prins** **$48K** **51**
Supports continuity of services and improvements to the current GOES WF_ABBA system and implementation of future geostationary WF_ABBA fire products for NESDIS operations.

Inter-Calibration **Gunshor** **$42K** **36**
The "routine" side of intercalibration: make routine comparisons of the infrared window, water vapor, and 13.3 micrometer CO2-absorption band channels on operational geostationary instruments (GOES, Meteosat, etc) by using the same polar-orbiting instrument (NOAA AVHRR and HIRS). Report methods, results and new findings annually at Coordination Group for Meteorological Satellite (CGMS) meetings to fill CGMS request of satellite operators to regularly perform satellite intercalibration.

Ground Systems Programs

MSG-MTSAT Winds **Velden** **$100K**
Primary objectives are to adapt the automated winds software to newly available satellites, and to test and validate the changes made to accommodate the new datastreams. Focus has been on Meteosat-8 (formerly MSG) and MTSAT (replacing GOES-9).

IHOP Data Analysis **Feltz** **$80K**
USWRP funded initiative to improve quality of single field of view GOES derived moisture and stability measurements using DOE ARM data sets for validation.

GOES-12 CTP **Schreiner** **$55K**
Transferring this processing system from an IBM-AIX processing platform to LINUX machine in anticipation of transferring the GOES-12 Imager CTP to the operational environment at NESDIS/OSDPD. Once the software modifications and the latest improvements are incorporated to this new processing system, output to a BUFR format will also be added. The GOES-12 Imager CTP will complement the GOES Sounder CTP.

GOES-9 Sounder Processing **Nelson** **$55K** **42**
Provide support for the continued generation of the currently produced Sounder products (GOES-9 is positioned over the western Pacific Ocean and geostationary sounding of the atmosphere has never before been available over this portion of the globe), as well as the addition of more products to the suite and the migration of the production software to a different computer platform.

Global Observing System **Schmidt, Prins** **$50K**
Develop meteorological products from the global suite of geostationary environmental satellites. Utilize the common spectral bands of the imaging instruments to build algorithms for products such as atmospheric motion vectors, cloud properties, biomass burning, etc.

Full Disk Insolation **Heidinger** **$40K**
The full disk GOES Surface and Insolation Project (GSIP-fd) is a new processing system slated to replace the current GSIP that operates over CONUS with a coarser spatial resolution. GSIP provides estimations of solar insolation and surface temperature to NCEP for the land data assimilation system (LDAS). The CIMSS activities involve validation and development of improved algorithms from the GOES imagers for use in GSIP-fd.

GOES-R Risk Reduction Programs

Soundings **A. Huang** **$400K**
Study of the future HES sounding capability with a focus on soundings that can capture spatial and temporal features better than the current GOES sounder, and also to demonstrate that sounding retrievals over land can be achieved through semi-continuous high spectral resolution infrared measurements that contain significant surface properties to enable much improved treatment of the boundary effect in the sounding process.

GOES-R Data Processing Develop. **Knuteson, Garcia** **$200K** **52**
Identify long lead development items for the acquisition, processing, distribution, and archive of Hyperspectral Environmental Suite Sounder data in the GOES-R era.

Data Assimilation **A. Huang. X. Zhou** **$100K**
Develop simulated GOES-R data sets from field experiments, and run data assimilation experiments to determine the impact of HSR observations on NWP (collaboration subcontract to FSU).

Surface Properties **Knuteson** **$60K**
Preparation of realistic land surface emissivity global datasets using satellite observations combined with a land cover model and laboratory measurements. The emphasis is on a four dimensional dataset that captures seasonal changes of surface emissivity. This dataset is useful for data assimilation and for use in retrieval training sets.

Radiances **A. Huang** **$50K**
Provide and collect simulated measurements that can emulate GOES-R infrared sounding observations to support GOES-R sensor data and product algorithm development. The emphasis is on

the optimal specification of the top of atmosphere radiances that can be used to conduct data processing and algorithm development in the areas of performance evaluation, ground processing testing, and end-to-end processing system demonstration.

Hyperspectral Winds **Velden** **$50K**
Conduct simulation studies to reduce risk in the GOES-R hyperspectral sounder data scenarios, with the focus on generating wind datasets.

Multispectral Visualization Tools **Rink** **$50K**
Develop HYDRA visualization tools for interrogation of multispectral data and demonstrate with MODIS and AIRS data.

Clouds **Ackerman** **$50K**
Develop cloud property retrieval and fast radiative transfer algorithms in support risk reduction of the GOES-R program.

Joint Center for Satellite Data Assimilation Programs
Data Impact Studies **Zapotocny, Jung** **$125K** **46**
Test the impact of assimilating new satellite data types into the NCEP Global Data Assimilation System. The effort currently is concentrating on MODIS high latitude winds with a more stringent quality control algorithm.

AIRS Radiance Assimilation Experiments **Jung** **$115K**
Develop and test several new assimilation techniques for assimilating AIRS data into NCEP's Global Forecast System as part of a team effort with NESDIS, NCEP, and NASA. We are presently working with NCEP to implement these techniques in their operational system. Future work will focus on improving the surface emissivity to improve the use of the AIRS radiances.

Community RT Model **van Delst** **$80K** **45**
Develop an initial interface for the Community Radiative Transfer Model (CRTM). The CRTM is being developed to include processes such as cloud scattering and absorption, aerosol scattering and absorption, better treatment of the surface optics – in particular over land, and more sophisticated radiative transfer. Eventually, this will allow cloudy, aerosol-contaminated, and surface sensitive channel radiances to be used in the data assimilation systems at NCEP/EMC. Having a defined interface for the CRTM will facilitate implementation of the various codes delivered by various JCSDA-funded research groups.

MW Radiance Assimilation **Bennartz** **$150K** **44**
New forward, tangent linear and adjoint radiative transfer models for data assimilation purposes are being developed. These models are being used to support data assimilation in cloudy and precipitating conditions.

Other NOAA Programs
ABS Compression **B. Huang** **$350K**
Development of various data preprocessing schemes, various compression methods (transform-based, predictor-based, clustering-based) for the GOES-R HES data compression studies. Error containment algorithms are being developed to transmit the HES data through satellite noisy channels. Retrieval impact studies are being performed to assess the effects of HES lossy compression on weather products.

ABI/HES Instrument Study **Li** **$300K** **53**
Assist in the development of the next generation geostationary instruments ABI and HES, along with the most effective use of the data from those instruments to meet user needs. To investigate the HES trade-off study to meet minimum cost/risk while still meet the science needs.

VISIT **Whittaker** **$240K** **33**
Explore new techniques and procedures for providing just-in-time teletraining and distance learning opportunities for National Weather Service Forecasters. To date, presentations have been made to more than 15,000 forecasters with over 900 sessions offered through collaborations with CIRA, WDTB, and various Centers. The teletraining and collaboration toolkit (VISITview) developed by this project is being used by other agencies and national meteorological services, as well as the WMO for facilitating remote training of forecasters.

HSR Data Processing Demo **Knuteson** **$200K**
Provide a software demonstration of the parallel processing of hyperspectral data using simulated and pre-launch GIFTS data as a practical example.

SHyMet **Ackerman** **$75K**
The long-term goal of SHyMet is to develop comprehensive distance learning courses on satellite hydrology and meteorology. The role of CIMSS is to provide advice on the educational design of the program, assist in the development of the curriculum, support distance education activities, develop and test appropriate satellite education material.

Nowcasting **Petersen** **$60K** **34**
Formulate a new objective nowcasting tool which preserves and takes full advantage of both the detailed horizontal, vertical and temporal detail inherent in many new asynoptic observing systems, including future hyperspectral satellite products and the frequent information refreshes available from current and future geostationary instruments.

Sensor Synergy **Bennartz** **$58K**
The synergetic use of combinations of various sensors onboard NOAA-18, and NPP are studied, in particular the combination of microwave sensors with spatially highly resolving instruments (e.g., VIIRS and ATMS) for cloud detection/cloud clearing.

SEARCH-Heat Advection **Key** **$55K** **35**
Evaluate the degree to which historical and ongoing measurements can be used to answer science questions posed by the multi-agency Study of Environmental Arctic Change (SEARCH) project, and aid in the evaluation of optimum locations for an expansion of the Arctic observing network. Perform a retrospective analysis of coincident surface measurements and satellite-derived quantities, comparing one to the other, and assessing the spatial and temporal variability in each parameter.

AWIPS **Wade, Wanzong** **$40K** **32**
Install and operate a National Weather Service (NWS) Advanced Weather Interactive Processing System (AWIPS) workstation at CIMSS with real-time data access. Currently, GOES (Geostationary Operational Environmental Satellite) imagery and NWS NEXRAD radar data are available; other sources (grids, point observations) remain to be successfully ingested. The actual display (in D2D) of real-time GOES Sounder Derived Product Imagery (DPI) in June 2005 indicates that the capability now exists at CIMSS to further contribute in training development, validation, and implementation of current satellite products in the AWIPS environment.

INSAT Navigation **Limaye** **$30K**
Develop navigation algorithms for the Kalpana environmental satellite from India.

New Program Funding

GOES-N Checkout **Schmit** **$120K**
Conduct thorough checkout of GOES-N instruments following launch and deployment, including radiances, calibration and validation of derived products. Publish report.

Implementation of AODT **Kossin/Velden** **$99K**
Improve the Advanced Dvorak Technique (ADT) and implement the algorithm into the operational N-AWIPS platform at the Tropical Prediction Center. The ADT is a computer-based algorithm to objectively estimate tropical cyclone (TC) intensity using geostationary infrared satellite data. The intent of the ADT is to remove subjectivity inherent in applications of the operational Dvorak Technique (DT). ADT intensity estimates have been demonstrated to be as accurate as estimates obtained using the DT at three operational TC forecast centers.

THORPEX **Velden** **$75K** **29**
Demonstrate the concept of targeted and enhance observations from satellites by focusing on GOES rapid-scan imaging and products on targets of opportunity during the THORPEX Atlantic Regional Campaign in 2004. Using these datasets, look to optimize quality control and assimilation strategies for positive gains on NWP forecasts (NCEP model).

WVSS II **Petersen, Feltz** **$70K** **30**
Deploy a suite of in situ and remote sensing weather instruments at the Louisville International Airport (SFD) to validate moisture and temperature profiles from newly installed Water Vapor Sensing Systems - II (WVSS-II) systems on United Postal Services (UPS) airline aircraft. The assessment effort also plans to analyze the variability in high temporal resolution water vapor profiles to help quantify the quantitative optimal spacing and sampling frequency needed from water vapor aircraft data.

Gridded Clouds **Schmit** **$40K** **43**
Develop an extended capability for the existing operational GOES sounder cloud product system to deliver the NWS hourly gridded (10km) cloud products (cloud-top pressure, effective cloud amount, cloud-top temperature) The gridded cloud products will be made available on a Lambert Conformal Grid in GRIB-2 format. This work is in conjunction with the NOAA/NEDIS/ORA/FPDT. Our part of the project is dealing with the verification of the gridded cloud product

Secondary Eyewall **Kossin** **$38K**
Develop a predictive index for secondary eyewall formation (SEF) in tropical cyclones. SEF typically coincides with large intensity fluctuations. The index will be based on measurements using NCAR/NCEP reanalyses, GOES-IR imagery, and TRMM-TMI/SSM/I imagery.

Computing Enhancements **Aune, Olson** **$36K**
Hardware to upgrade systems, including a 4-CPU node for the sgi Altix system (serenity) – to generate high-resolution model forecasts for future observing system simulation experiments (OSSE) and conducting satellite data assimilation experiments – and a dual 3.6 GHz Xeon desktop with a high performance video capability to replace an aging sgi workstation – to visualize results from satellite data assimilation impact studies.

ORA IT Study **Schreiner** **$10K**
Determine the requirements for the ORA IT Infrastructure that will serve the ORA research community and its partners in the future. A representative of CIMSS, along with representatives from other universities, cooperative institutes, and scientists within ORA, took part in the ORA Information Technology (IT) Infrastructure Study during the week of May 16-20, 2005 at the NOAA Science Center in Camp Springs, MD. Following a week-long discussion of recommendations and goals for ORA IT, a report will be written and submitted to ORA management by the study group.

NASA Programs Lead 2005 Funds CD Index

Continuing Funding

MODIS Cloud Mask **Ackerman** **$550K** **19**
Maintaining, validating and improving the NASA MODIS MOD35 algorithm for cloud detection.

IMAPP Phase II **A.Huang, Gumley** **$350K** **20**
Support and enhance the International MODIS/AIRS Processing Package for EOS Terra/Aqua direct broadcast. Recent additions to the package included the MODIS aerosol retrieval algorithm; a near-infrared water vapor retrieval algorithm; an AMSR-E Level-1B algorithm and Level-2 precipitation algorithm; and beta testing for v4.0 of the AIRS Level-2 retrieval algorithm. IMAPP is now enabling MODIS polar winds to be generated in real-time at McMurdo Station in Antarctica, highlighting the fact that IMAPP is now used on every continent.

MODIS Cloud Properties **Menzel** **$311K**
Specific activities include: (a) preprocessing the MODIS multi-detector infrared data into coherent images (de-striping), (b) monitoring of instrument performance against reference standards from ground sites (ARM CART); (c) refinement of the cloudy sky temperature, height and ice/water property algorithms (cloud properties) to include radiance bias adjustment, visible and near infrared cloud phase tests, cloud overlap detection; and (d) extension of the long term satellite cloud studies (cloud trends) from AVHRR/HIRS to MODIS.

Using AIRS **Revercomb** **$266K**
Assessing the long-term consistency and accuracy of EOS IR radiance measurements from Aqua and Terra is the overall goal of this project. It is being accomplished by first validating AIRS with the University of Wisconsin Scanning-High resolution Interferometer Sounder (S-HIS), and then inter-comparing IR observations from MODIS and CERES with AIRS, which serves as a common standard because its high spectral resolution allows the spectral channels of broadband instruments to be emulated. A laboratory check of the S-HIS calibration using a NIST transfer radiometer will also be conducted under flight temperature conditions.

MODIS L3 Cloud Property **Ackerman** **$165K**
Study the global distribution of MODIS cloud products using the MODIS Atmosphere Level-3 data and examine the sensitivity of spatial/temporal aggregation strategies on the results.

EOS Real Time Products **Gumley** **$160K**
Facilitate the transition of EOS products to operational agencies in near real-time, via the direct broadcast service of Terra and Aqua. In the past year, routine products were generated for customers including the NOAA Coastwatch Great Lakes Node, which requested 250 meter MODIS true color GeoTIFF images of each of the Great Lakes. MODIS true color GeoTIFF images in UTM projection

were also generated routinely for the US National Ice Center and the Canadian Ice Service: all images were generated automatically in near real-time.

EOS Validation-Miami **Feltz, Knuteson** **$150K**
NASA Goddard supported initiative through U of Miami subcontract (Peter Minnett PI) to validate AIRS temperature/moisture/radiance quality with radiosondes/AERI data from the cruise ship the Explorer of the Seas.

SOSE **Ackerman** **$125K** **17**
Improve the quality of teaching and learning about the Earth system, through the use of quality educational resources that make use of satellite observations.

NASA-Polar Winds **Key, Santek** **$80K** **27**
Develop a satellite-based, tropospheric wind product covering both polar regions using a combination of instruments. A second objective of the project is to work closely with the NASA Global Modeling and Assimilation Office, as well as the Joint Center for Satellite Data Assimilation (JCSDA) to improve the use of the satellite-derived polar winds in NWP models.

Heat Advection **Key** **$60K**
Our overarching hypothesis in the project is that the patterns of heat and moisture transport into and within the Arctic basin have changed significantly during the past 20 years, and they are strongly linked to regionally-varying changes in cloud properties, surface temperature, net precipitation, surface radiation fluxes, and large-scale circulation patterns. We will explore this hypothesis by examining the covariability of advective pattern with cloud properties, surface temperature, net precipitation, and radiative fluxes, and by investigating the extent to which the observed variability in atmospheric and surface parameters are related to large-scale atmospheric circulation patterns.

Suomi-Simpson Fellowship **Ackerman** **$50K** **15**
A NASA Goddard supported initiative to support PhD students through collaborations between UW and GSFC scientists.

CALIPSO **Ackerman** **no new funding** **16**
Support the CALIPSO mission as a member of the science team. Provide science support and development of methods of deriving cloud properties with the CALIPSO in combination with infrared measurements.

The Woods Hole Research **Schmidt, Prins** **no new funding** **26**
Use remote sensing information to gain a more complete picture of fire in the tri-frontier area of Brazil, Bolivia, and Peru which can be used to characterize land-use change in this rapidly changing region of the Amazon.

Multilayered Clouds **Baum** **no new funding**
Apply CO2 slicing, cloud overlap detection, and cloud phase to full-resolution (1-km) MODIS Direct Broadcast data, and help to improve operational MODIS code through analyses with direct broadcast products.

New Program Funding

Advanced Satellite Aviation Prod Feltz $280K
A NASA LaRC supported initiative to develop and provide satellite interest fields to FAA aviation hazard program development teams. Specifically this research focuses on satellite derived convection, volcanic ash, and turbulence. The goal is to infuse satellite derived products into NCAR/FSL "smart algorithms" to improve aviation hazard nowcasting.

TAMDAR Validation Feltz $145K 18
A NASA LaRC supported initiative to validate temperature, moisture, winds, turbulence, and icing measurements (TAMDAR) on Mesaba aircraft in Memphis, Tennessee. Deploy the AERIBago at the Memphis airport and launch radiosondes coincident with Mesaba aircraft ascents and descents to determine moisture/temperature profile quality.

Clouds – LaRC collaboration Ackerman, Heck $130K
Conduct scientific and developmental analyses in support of CERES,ARM, NASA ASAP, and related programs by improving and enhancing derivation of cloud properties from GOES, MODIS, AVHRR and MSG data.

CO2 Column over Clouds Bennartz $130K
Development of level 2 and level products for the Orbiting Carbon Observatory (OCO) that complement the official science team algorithms. In particular, carbon dioxide column amount over clouds, cloud top pressure, and cloud optical and microphysical properties will be derived.

CAMEX Applications Velden $120K 25
Demonstrate the concept of targeted observations from satellites by focusing GOES rapid-scan imaging and products on tropical cyclone events during the CAMEX-V field program. Also, utilize these datasets to characterize and diagnose the upper-level conditions during TC genesis.

IDEA Wimmers $101K 23
Improve air quality assessment, management, and prediction by infusing MODIS satellite measurements (from NASA) into analyses (by EPA and NOAA) for public benefit. IDEA (Infusing satellite Data into Environmental Applications) is a partnership between NASA, the EPA, and NOAA. IDEA is a part of the NASA Earth Science Enterprise (ESE) Applications Program strategy to demonstrate practical uses of NASA sponsored observations from remote sensing systems and predictions from scientific research.

Land Surface Characterization Knuteson $100K
Validate AIRS land surface products (skin temperature and surface emissivity) through comparison with surface, airborne, and other satellite products funded under NASA grant for validation of the Aura spacecraft.

MOD07 Algorithm Refinement Seemann $70K 22
Maintain and validate the NASA MODIS MOD07 algorithm for atmospheric retrievals of temperature, moisture, and ozone profiles, including products derived from the profiles. Routine comparisons are made with other satellite- and ground-based instruments. Algorithm refinements are ongoing and include improvements to the training database used for the regression (profiles and surface characterization) and updates to the forward model used to calculate the synthetic radiances.

Arctic Land Surface Model **Key** **$45K**
Combine data synthesis and land surface modeling to assemble the best possible time series (20+ years) for the Arctic terrestrial drainage of land surface state variables (snow water equivalent, soil moisture, soil temperature) and moisture and energy fluxes (sensible, latent, and ground heat, radiation). The generated time series (both model forcings and outputs) will be used in studies addressing spatio-temporal variability in sensible heat fluxes and evapo-transpiration, land surface feedbacks on precipitation, and development of the summer Arctic frontal zone.

DOD Programs Lead 2005 Funds CD Index

Continuing Funding

MURI **Huang, Feltz** **$800K** **1,5,6**
A Navy ONR funded effort for basic research on future hyperspectral data meteorological product development specifically focusing on lower tropospheric retrievals, improved fast models for clear/cloudy conditions, and development of simulated data sets for exploration. The use of mesoscale NWP models such as MM5 and more recently WRF models are to simulate four-dimensional thermal dynamical consistent atmospheric conditions that can be used to simulate future space borne hyperspectral observations and allow scientists to develop and test processing models and algorithms to demonstrate the practical utilities of these type of sensors' measurement information content.

NRL-MRY Satellite Applications **Velden** **$260K** **2,3**
Improve quantitative observations from meteorological satellites, and further the application of these observations to specific meteorological phenomena pertinent to naval fleet operations. Focus is on 1) tropical cyclones, 2) winds derivation methods, and 3) preparation for next-generation satellite hyperspectral sounder and imager products.

Biomass Burning **Schmidt, Prins** **$75K** **7**
Joint research project with the Navy to develop and implement a global geostationary fire monitoring system and provide products in real-time for assimilation into the Navy NAAPs model and other transport models. This effort also involves data analysis and multi-sensor comparison components.

New Program Funding

Parallel Computing Cluster **Garcia, Olson** **$460K** **4**
This project involves the specification, purchasing, installation and integration of computing and storage hardware in support of research and education. The SGI Altix 'serenity' installed in the Data Center was purchased using these funds. We are finalizing purchase orders for the storage component of the system.

Rapid Scan Winds **Velden** **$50K**
Obtain special wind data sets from GOES rapid-scan operations and test for improvements in the NRL global numerical model NOGAPS forecasts of hurricanes. Also, this work will focus on issues of adaptive sampling, targeted observations, and optimizing satellite data assimilation into NWP.

DOE Programs | Lead | 2005 Funds | CD Index

Continuing Funding

ARM Data Analysis **Knuteson, Feltz** **$160K** **9**
Final year of DOE supported initiative to develop and maintain AERI temperature and moisture retrieval algorithm code for Atmospheric Radiation Measurement project.

DOE-Measurement Programs **Revercomb, Tobin** **$150K**
High spectral resolution infrared measurements by the AERI, Scanning-HIS, and AIRS collected over the ARM sites are used to help address various ARM study areas, including the characterization of temperature and water vapor fields within the ARM grid cell domains, cloud radiative transfer studies, and assessment of heating rate profiles and downwelling flux at the surface and upwelling flux at the top of atmosphere.

ARM Validation **Tobin** **$130K** **10**
Create best estimates of the surface and atmospheric state at the EOS Aqua overpass times using various measurements at the three primary ARM sites. This includes dedicated radiosonde launches at the overpass times. These validation products are used in various studies to assess the accuracy of the AIRS and MODIS radiances, clear sky forward model, and temperature and water vapor profile retrievals.

NSF Programs | Lead | 2005 Funds | CD Index

New Program Funding

Tropical Cyclone Genesis **Kossin** **$100K** **54**
Predict the structure of a nascent tropical cyclone from knowledge of large-scale flow invariants using a statistical mechanics approach. Results indicate that we can better predict whether an incipient vortex has a good chance of intensifying to become a tropical storm.

IPO Programs | Lead | 2005 Funds | CD Index

Continuing Funding

VIIRS Cloud Studies **Heidinger** **$150K** **14**
Assessing the cloud algorithms being developed for the NPOESS-VIIRS operational processing system. In the short term, we have developed new and modifications for existing algorithms in collaboration with the VIIRS program. In the long run, we are undertaking studies to explore the physical consistency of the VIIRS cloud products with those from heritage sensors (AVHRR/GOES/MODIS).

GPS Retrieval **Menzel, Borbas** **$70K** **12**
Establish algorithms for GPS plus AIRS/AMSU soundings that will provide a validation reference CrIS/ATMS soundings: a principal component AIRS regression retrieval algorithm is adapted for combined AIRS + AMSU + GPS soundings. The results are tested on real data and compared to RAOB measurements and the official AIRS L2 products.

Radiative Validation **Menzel/Plokhenko** **$50K**
(a) Explore AIRS/MODIS intercalibrations (IR cal, RVS characterization) and continue CART site determination of calculated and observed differences in MODIS radiances. (b) Study sensitivity of temperature and moisture profile retrievals to CO2 profiles. (c) Investigate three dimensional strategy for combined surface and atmospheric profile estimation with AIRS data.

Snow/Ice **Key** **$30K**
Improve current VIIRS algorithms, increase our understanding of their limitations, and identify potential uses in numerical weather prediction and climate studies. The work is reducing risk and assuring a successful transition from current polar orbiting operational environmental satellites to future NPOESS.

VIIRS Cloud Property Alg. **Menzel** **$30K**
Test VIIRS plus CrIS cloud property definition by (a) exploring alleviation of VIIRS cloud problems using CrIS (using MODIS and AIRS for test data) and (b) demonstrating improvement in EDRs with addition of a VIIRS water vapor channel.

New Program Funding

NPP VIIRS Science Team **Moeller** **$116K** **13**
Assess pre-launch test data quality and uncover performance issues of the VIIRS instrument on NPP. Contribute towards the validation plan of level 1 radiances and science products for the post-launch era.

International Programs Lead 2005 Funds CD Index

Continuing Funding

CWB Wind **Velden** **$60K**
Provide real time, multi-satellite, multi-spectral wind datasets to the Taiwan Central Weather Bureau for assimilation testing and demonstration.

GLI Cloud Mask **Ackerman** **no new funding** **11**
Funded by NASDA; apply MODIS Cloud Mask developed at CIMSS to the Japanese Global Imager (GLI) which will fly on ADEOS II (and is similar to MODIS).

New Program Funding

RPI Wind **Kossin** **$35K**
Develop an algorithm to estimate the inner-core winds in tropical cyclones using GOES infrared imagery. The algorithm is based on Single Field Principle Component Analysis (SFPCA). At present, there are no satellite-based tools for estimating the inner-core wind field in tropical cyclones, and measurements rely entirely on aircraft measurements. Our new algorithm provides skillful wind field estimates when no aircraft is available.

CD POWERPOINT PRESENTATIONS
June 22, 2005

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CIMSS PROPOSAL SUMMARY
Currently Pending as of June 2005

Fast Methods for Computing Hyperspectral Infrared Radiances in Cloudy Atmospheres for Direct Radiance Assimilation
Greenwald
NOAA, $639,711

FPGA Re-Configurable Computation Demonstration: AIRS/MODIS Co-Registration, Cloud Characterization and Data Assimilation
A. Huang
NASA, $1,503,928

Tropical Cyclone Intensity Forecasting
Kossin
NOAA, $38,000

Research on the accuracy of NPP as Platform as a Cloud Observing System
Heidinger, Ackerman
SAIC, $47,000

Utilization of GOES Rapid-Scan Wind Data for Tropical Cyclone Predictability Experiments
Velden
DOD, Navy, $100,000

CIMSS Research Activities for the Visit Program
Ackerman, Whittaker
NOAA, $240,000

CIMSS Participation in SHyMet
Ackerman
NOAA, $75,000

Global Geostationary Satellite Remote Sensing of Fires
Ackerman, Prins, Schmidt
NRL-Monterey CA, $150,000

ASAP Activities at CIMSS
Ackerman
SAIC, $281,000

CIMSS Participation in GOES-R Risk Reduction
Ackerman
NOAA, $910,000

Radiance Calibration/Validation Cloud Property Determination and Combined Geometric Plus Radiometric Soundings for the NPOESS
Ackerman Revercomb Heidinger
NOAA, $346,000

CIMSS Studies in Satellite Navigation and Climate Applications
Ackerman
NOAA, $60,000

Parameterizing Size Distribution in Ice Clouds
DeSlover
DOE, $82,117

Assessing New Cloud and Radiation Parameterizations of Boundary Layer Cumuli Through the ARM Site Observations
Ackerman, Moy
DOE, $137,633

High Spectral Resolultion Obserations for the ARM Program: Clear and Cloudy Sky Applications
Revercomb, Tobin, Li, Nasiri, Knuteson
DOE, $658,534

Studies for the Community Radiative Transfer Model in 2005
van Delst
NOAA, $148,000

Analysis of Long-Term Fire Dynamics and Impacts in the Amazon Using Integrated Multi-Source Fire Observations
Ackerman, Schmidt, Prins
Univ. of Maryland, $225,031

Support for the Near Real-Time Aerosol Transport for Infusion of Data into Environmental Applications (IDEA) (year 2)
Ackerman
SAIC, $101,252

Environmental Literacy 2005: Developing a Distance Learning Course for K-12 Teachers
Lindstrom, Mooney
WSGC (UW-Green Bay) to NOAA, $113,719

Environmental Literacy 2005: Educational Applications of the National Maritime Center Science on a Sphere
Ackerman, Achtor, Whittaker, Mooney
NOAA, $298,134

Study of Arctic Environmental Change (SEARCH)
Ackerman
NOAA, $110,400

CIMSS Participation in an ORA IT Infrastructure of the Future Study Group
Ackerman
NOAA, $10,512

Assimilation of AIRS, MODIS and GPS Data Products for Antarctic Weather Data Assimilation
A. Huang, Velden
NSF, $150,000

Institutional Base Funding to Support the CIMSS Research Program
Ackerman
NOAA, $60,000

Support for Planning of Assessment & Implementation Strategies for the WVSS-II Aircraft Borne Water Vapor Sensing System
Petersen, Feltz
NOAA, $58,000

CIMSS Studies in Collaboration with NCEP/EMC
Petersen
NOAA, $48,700

Improving the Impact of Satellite Data in NWP Using THORPEX Opportunities
Velden
NOAA, $227,305

Assimilating and Determining the Impact of Sea Surface Winds Measured by WINDSAT/CORIOLIS in the Global Forecast System
Zapotocny
NOAA, $123,000

Application of Satellite Data Toward Improving Understanding and Prediction of Hurricane Intensity and Structure Change
Kossin
NSF, $118,460

CIMSS Publishing Statistics
1995-2005

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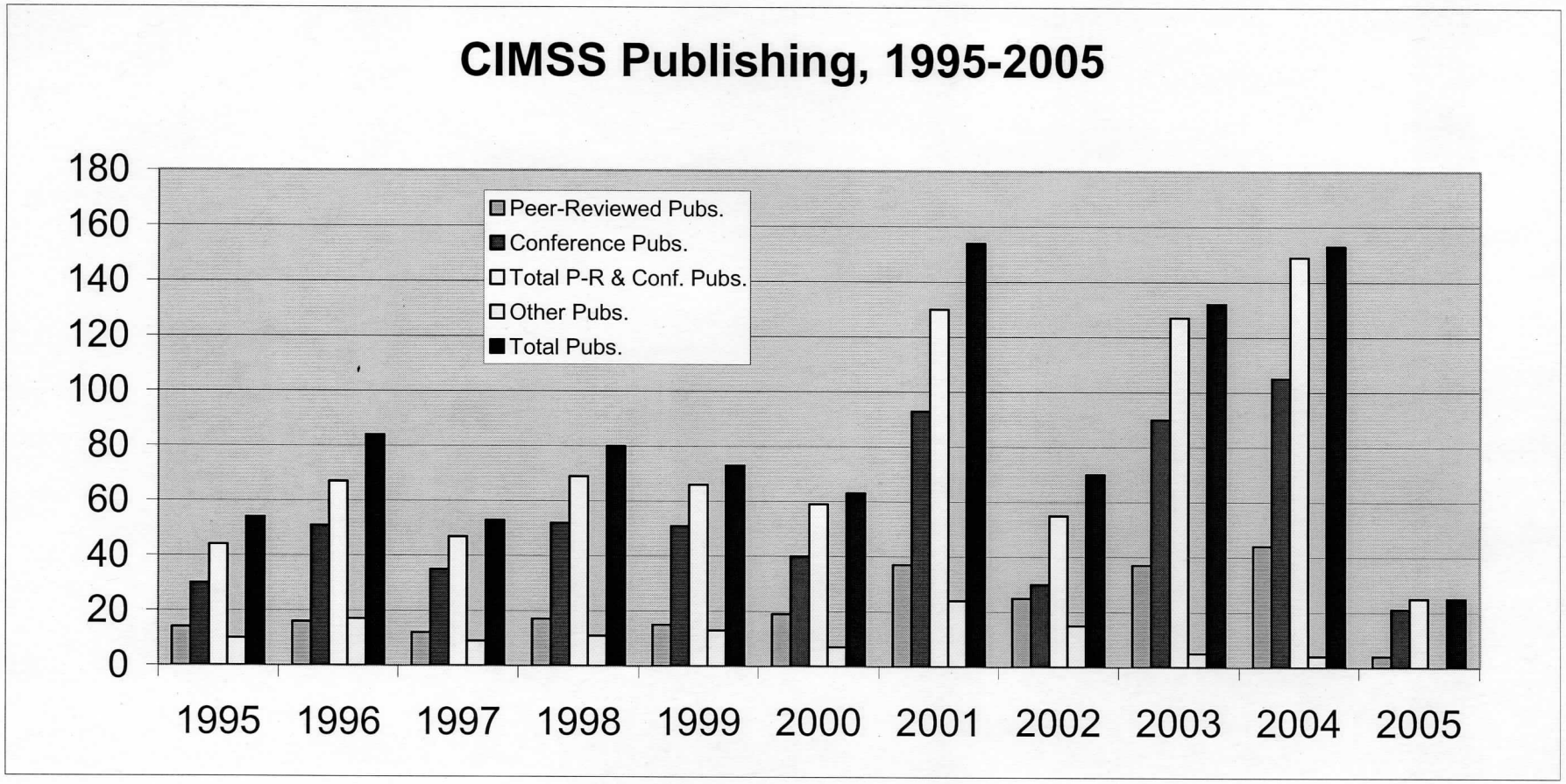
Compiled by
Jean M. Phillips, Librarian
Schwerdtfeger Library
June 2005



** Total publishing is steadily increasing. The number of peer-reviewed papers tripled during the period 1999-2004 and conference papers doubled, however; we do not have an accurate count of scientific staff other than to say staff increased during this time as well. The 2001 spike in publishing appears to correspond to the *Conference on Satellite Meteorology and Oceanography* which was hosted in Madison that year and which was heavily attended by CIMSS authors.

***The ratio of peer-reviewed publications can be represented as a percentage of total (peer-reviewed + conference). In 1995, peer-review accounted for 31.8% ; 1996, 23.8% ; 1997, 25.5% ; 1998, 24.6% ; 1999, 22.7% ; 2000, 31% ; 2001, 26.3% ; 2002, 44.4% ; 2003, 29.1% ; 2004, 28.4% ; 2005, 11%

****CIMSS scientists published a total of 916 documents during the period 1995-2005. Of those, 353 or 38.5% were co-authored by a NOAA scientist.

*****Publishing totals reflect the output of most CIMSS scientists, however, there may be a very few whose publications are not represented.

Top 26 Most Frequently Cited Papers of the Cooperative Institute for Meteorological Satellite Studies For the Period 1995-2005

*Indicates times cited

1) **99*** Kaufman, Y.J., Hobbs, P.V., Kirchhoff, V.W.J.H., Artoxo, P., Remer, L.A., Holben, B.N., King, M.D., Ward, D.E., Prins, E.M., Longo, K.M., Mattos, L.F., Nobre, C.A., Spinhirne, J.D., Ji, Q., Thompson, A.M., Gleason, J.F., Christopher, S.A., and Tsay, S.-C. Smoke, clouds and radiation-Brazil (SCAR-B) experiment. Journal of Geophysical Research 103, 31783-31808 (1998).

2) **80** King, M.D., Menzel, W.P., Grant, P.S., Myers, J.S., Arnold, G.T., Platnick, S.E., Gumley, L.E., Tsay, S.C., Moeller, C.C., Fitzgerald, M., Brown, K.S., and Osterwisch, F.G. Airborne scanning spectrometer for remote sensing of cloud, aerosol, water vapor, and surface properties. Journal of Atmospheric and Oceanic Technology 13,777-13,794, (1996).

3) **77** Velden, C.S., Hayden, Christopher, M., Nieman, Steven J., Menzel, W. Paul, Wanzong, Steven, and Goerss, James S. Upper-tropospheric winds derived from geostationary satellite water vapor observations. Bulletin of the American Meteorological Society 78, 173-195 (1997).

4) **66** Ackerman, S.A., Strabala, K.I., Menzel, W.P., Frey, R.A., Moeller, C.C., and Gumley, L.E. Discriminating clear sky from clouds with MODIS. Journal of Geophysical Research-Atmospheres 103, 32141-32157 (1998).

5) **48** Langland, R.H. , Toth, Z., Gelaro, R., Szunyogh, I., Shapiro, M.A., Majumdar, S.J., Morss, R.E., Rohaly, G.D., Velden, C., Bond, N., and Bishops, C.H. The North Pacific Experiment (NORPEX-98): Targeted observations for improved North American weather forecasts. Bulletin of the American Meteorological Society 80, 1363-1384 (1999).

6) **48** Wylie, D.P. and Menzel, W.P. Eight Years of High Cloud Statistics Using Hirs. Journal of Climate 12, 170-184 (1999).

7) **47** Smith, W.L., Knuteson, R.O., Revercomb, H.E., Feltz, W., Howell, H.B., Menzel, W.P., Nalli, N.R., Brown, O., Brown, J., Minnett, P., and McKeown, W. Observations of the infrared radiative properties of the ocean – Implications for the measurement of sea surface temperature via satellite remote sensing. Bulletin of the American Meteorological Society 77, 41-51 (1996).

8) **42** Platnick, S.; King, Michaek D. ; Ackerman, Steven A.; Menzel, W. Paul; Baum, Bryan A.; Riedi, Jerome C. , and Frey, Richard A. The MODIS cloud products: Algorithms and examples from Terra. IEEE Transactions on Geoscience and Remote Sensing 41, 459-473 (2003).

9) **40** King, Michael D.; Menzel, W. Paul; Kaufmann, Yoram J.; Tanre, Didier; Gao, Bo-Cai; Platnick, Steven; Ackerman, Steven A.; Remer, Lorraine A.; Pincus, Robert, and Hubanks, Paul A. Cloud and aerosol properties, precipitable water, and profiles of temperature and water vapor from MODIS. IEEE Transactions on Geoscience and Remote Sensing 41, 442-458 (2003)

10) **39** Anderson, M.C., Norman, J.M., Diak, G.R., Kustas, W.P., and Mecikalski, J.R. A two-source time-integrated model for estimating surface fluxes using thermal infrared remote sensing. Remote Sensing of Environment 60, 195-216 (1997).

11) **39** Kaufman, Y.J., Justice, C.O., Flynn, L.P., Kendall, J.D., Prins, E.M., Giglio, L., Ward, D.E., Menzel, W.P., and Setzer, A.W. Potential global fire monitoring from EOS-MODIS. Journal of Geophysical Research-Atmospheres 103, 32215-32238 (1998).

12) **39** Menzel, W.P., Holt, F.C., Schmit, T.J., Aune, R.M., Schreiner, A.J., Wade, G.S., and Gray, D.G., Application of GOES-8/9 soundings to weather forecasting and nowcasting. Bulletin of the American Meteorological Society 79, 2059-2077 (1998).

13) **37** Nepstad, D., Carvalho, Georgia, Barros, Ana Cristina, Alencar, Ane, Capobianco, Joao Paulo, Bishop, Josh, Moutinho, Pauol, Lefebvre, Paul, Silva, Urbano Lopes Jr., and Prins, Elaine. Road paving, fire regime feedbacks, and the future of Amazon forest. Forest Ecology and Management 154, 395-407 (2001).

14) **35** Prins, E.M., Feltz, J.M., Menzel, W.P., and Ward, D.E. An overview of GOES-I diurnal fire and smoke results for SCAR-B and 1995 fire season in South America. Journal of Geophysical Research-Atmospheres 103, 31821-31835 (1998).

15) **33** Nieman, S.J., Menzel, W.P., Hayden, C.M., Gray, D., Wanzong, S.T., Velden, C.S., and Daniels, J. Fully automated cloud-drift winds in NESDIS operations. Bulletin of the American Meteorological Society 78, 1121-1133 (1997).

16) **30** Baum, B.A., Kratz, David P., Yang, Ping, Ou, S.C., Hu, Yongxiang, Soulen, Peter F., and Tsay, Si-Chee. Remote sensing of cloud properties using MODIS airborne simulator imagery during SUCCESS. 1. Data and models. Journal of Geophysical Research 105, 11,767-11,780 (2000).

17) **29** Feltz, W.F., Smith, W.L., Knuteson, R.O., Revercomb, H.E., Woolf, H.M., and Howell, H.B. Meteorological applications of temperature and water vapor retrievals from the ground-based Atmospheric Emitted Radiance Interferometer (AERI). Journal of Applied Meteorology 37, 857-875 (1998).

18) **29** Velden, C.S., Olander, T.L., and Wanzong, S. The impact of multispectral GOES-8 wind information on Atlantic tropical cyclone track forecasts in 1995. Part I: Dataset methodology, description, and case analysis. Monthly Weather Review 126, 1202-1218 (1998).

19) **29** Vicente, G.A., Scofield, R.A., and Menzel, W.P. The operation GOES infrared rainfall estimation technique. Bulletin of the American Meteorological Society 79, 1883-1898 (1998).

20) **25** Baum, B.A., Soulen, Peter F., Strabala, Kathleen I., King, Michael D., Ackerman, Steven A., Menzel, W. Paul, and Yang, Ping. Remote sensing of cloud properties using MODIS airborne simulator imagery during SUCCESS. 2. Cloud thermodynamic phase. Journal of Geophysical Research 105, 11,781-11,792 (2000).

21) **25** Tobin, D.C., Best, F.A., Brown, P.D., Clough, S.A., Dedecker, R.G., Ellingson, R.G., Garcia, R.K., Howell, H.B., Knuteson, R.O., Mlawer, E.J., Revercomb, H.E., Short, J.F., van Delst, P.F.W., and Walden, V.P. Downwelling spectral radiance observations at the Sheba Ice Station: Water vapor continuum measurements from 17 to 26 mu m. Journal of Geophysical Research-Atmospheres 104, 2081-2092 (1999).

22) **25** Wang, J.X., Anderson, G.P., Revercomb, H.E., and Knuteson, R.O. Validation of FASCOD3 and MODTRAN3: Comparison of model calculations with ground-based and airborne interferometer observations under clear-sky conditions. Applied Optics 35, 6028-6040, (1996).

23) **23** Smith, W.L., Ackerman, S., Revercomb, H., Huang, H., Deslover, D.H., Feltz, W., Gumley, L., and Collard, A. Infrared spectral absorption of nearly invisible cirrus clouds. Geophysical Research Letters 25, 1137-1140 (1998).

24) **23** Smith, W.L., Feltz, W.E., Knuteson, R.O., Revercomb, H.E., Woolf, H.M., and Howell, H.B. The retrieval of planetary boundary layer structure using ground-based infrared spectral radiance measurements. Journal of Atmospheric and Oceanic Technology 16, 323-333 (1999).

25) **22** Soden, B., Tjemkes, S., Schmetz, J., Saunders, R., Bates, J., Ellingson, B., Engelen, R., Garand, L., Jackson, D., Jedlovec, G., Kleespies, T., Randel, D., Rayer, P., Salathe, E., Schwarzkopf, D., Scott, N., Sohn, B., de Souza-Machado, S., Strow, L., Tobin, D., Turner, D., van Delst, P., and Wehr, T. An intercomparison of radiation codes for retrieving upper-tropospheric humidity in the 6.3 micron band: A report from the first BVaP Workshop. Bulletin of the American Meteorological Society 81, 787-808 (2000).

26) **22** Wu, X.Q., Menzel, W.P., and Wade, G.S. Estimation of Sea Surface Temperatures Using Goes-8/9 Radiance Measurements. Bulletin of the American Meteorological Society 80, 1127-1138 (1999).

Top 20 Meteorology & Atmospheric Science Journals in 2003:

Sorted by Total Cites*

Rank	Abbreviated Journal Title	ISSN	2003 Total Cites	Impact Factor	Immediacy Index	2003 Articles	Cited Half-life
1	J ATMOS SCI	0022-4928	**13952**	2.641	0.510	200	>10.0
2	ATMOS ENVIRON	1352-2310	**13317**	2.338	0.356	523	5.7
3	J CLIMATE	0894-8755	**10992**	3.617	0.550	282	5.6
4	MON WEATHER REV	0027-0644	**10164**	2.179	0.476	189	>10.0
5	B AM METEOROL SOC	0003-0007	**5749**	4.500	0.421	114	6.8
6	Q J ROY METEOR SOC	0035-9009	**5506**	2.117	0.550	169	9.7
7	J APPL METEOROL	0894-8763	**4948**	1.738	0.313	131	10.0
8	WATER AIR SOIL POLL	0049-6979	**4898**	0.883	0.184	207	8.4
9	GLOBAL BIOGEOCHEM CY	0886-6236	**4065**	3.383	0.554	121	6.1
10	ADV SPACE RES	0273-1177	**3341**	0.483	0.044	663	6.5
11	J ATMOS SOL-TERR PHY	1364-6826	**2995**	1.180	0.211	128	8.3
12	AGR FOREST METEOROL	0168-1923	**2992**	2.395	0.277	101	7.4
13	CLIM DYNAM	0930-7575	**2818**	3.437	0.729	96	5.1
14	BOUND-LAY METEOROL	0006-8314	**2775**	1.293	0.247	89	>10.0
15	J ATMOS OCEAN TECH	0739-0572	**2717**	1.637	0.671	146	5.8
16	J AEROSOL SCI	0021-8502	**2688**	1.738	0.686	102	7.3
17	J AIR WASTE MANAGE	1047-3289	**2498**	1.115	0.328	137	7.0
18	TELLUS B	0280-6509	**2433**	2.586	0.278	79	6.7
19	CLIMATIC CHANGE	0165-0009	**2366**	2.326	0.611	90	5.8
20	RADIO SCI	0048-6604	**2345**	0.832	0.111	162	>10.0

*Total Cites is the number of total citations to articles in the journal for the current Journal Citation Reports (JCR) year. 2003 is the most recent year with complete data. All information extracted from Journal Citation Reports 2003.

During the period 1995-2005, CIMSS authors published 240 articles in peer-reviewed journals. Of those, 114, or 47.5% were published in one of the top twenty meteorology and

atmospheric sciences journals with the highest total cites. Another 40, or 16.6% were published in the Journal of Geophysical Research or Geophysical Research Letters, the two most cited journals in the geosciences.

Fifteen of the twenty most highly cited meteorology and atmospheric science journals for 2003 also appear on the list of journals with the highest impact factor. The journal impact factor is a measure of the frequency with which the *average article* in a journal has been cited in a particular year. The impact factor is calculated by dividing the number of citations in the current year to articles published in the two previous years by the total number of articles published in the two previous years. (for more information, see Journal Citation Reports)

Publications of the Cooperative Institute for Meteorological Satellite Studies (CIMSS) 2004-2005

2005 Reviewed Publications

Al-Saadi, J.; Szykman, J.; Pierce, R. B.; Kittaka, C.; Neil, D.; Chu, D. A.;Remer, L.; Gumley, L.; Prins, E.; Weinstock, L.; MacDonald, C.; Wayland, R.; Dimmick, F.; Fishman, J., 2005: Improving National Air Quality Forecasts with Satellite Aerosol Observations. In press, *Bull. Amer. Meteor. Soc.*

Baum, B. A.; Heymsfield, A.J.; Yang, P.; Bedka, S. T. 2005: Bulk scattering models for the remote sensing of ice clouds. 1: Microphysical data and models. In press, *J. Appl. Meteor.*

Baum, B.A.; Platnick, S. 2005: Introduction to MODIS cloud products. In *Earth Science Satellite Remote Sensing, Vol. 1: Science and instruments*. Edited by J. J. Qu et al., Springer-Verlag. In press.

Baum, B. A.; Yang, P.; Heymsfield, A. J.; Platnick, S.; King, M. D.; Bedka, S. T. 2005: Bulk scattering models for the remote sensing of ice clouds. 2: Narrowband models. In press, *J. Appl. Meteor.*

Bedka, K. M.; Mecikalski, J. R. 2005: Application of satellite-derived atmospheric motion vectors for estimating mesoscale flows. In press, *J. Appl. Meteor.*

Demoz, B., C. Flamant, D. Miller, K. Evans, F. Fabry, P. Girolamo, D. Whiteman, B. Geerts, T. Weckwerth, W. Brown, G. Schwemmer, B. Gentry, W. Feltz, Z. Wang, 2005: Dryline on 22 May 2002 During IHOP: Convective Scale Measurements at the Profiling Site Part-I. Accepted by *Mon. Wea. Review.*

Freitas, S. R.; Longo, K. M.; Silva Dias, M.A.F.; Silva Dias, P.L.; Recuero, F. S.; Chatfield, R.; Prins, E.; Artaxo, P.; Recuero, F.S. 2005: Monitoring the transport of biomass burning emissions in South America. *Environmental Fluid Mechanics*, **5**,135–167.

Greenwald, T. J.; Bennartz, R.; O'Dell, C.; Heidinger, A. 2005: Fast computation of microwave radiances for data assimilation using the successive order of scattering method. In press, *J. Appl. Meteor.*

Hawkinson, J. A., W. F. Feltz, S. A. Ackerman, 2005: A Comparison Study Using the GOES Sounder Cloud Top Pressure Product and Cloud Lidar and Radar. Accepted by *J. Appl. Meteor.*

Heidinger, A.; O'Dell, C.; Greenwald, T.; Bennartz, R. 2005: The Successive Order of Interaction Radiative Transfer Model, Part I: Model Development, submitted to *J. Appl. Meteor.*

Heidinger, A. K.; Pavolonis, M. J. 2005: Global daytime distribution of overlapping cloud from NOAA's Advanced Very High Resolution Radiometer. Accepted by *J. Climate.*

Hibbard, William; Rueden, Curtis; Emmerson, Steve; Rink, Tom; Glowacki, David; Whittaker, Tom; Murray, Don; Fulker, David, and Anderson, John. Java distributed components for numerical visualization in VisAD. Communications of the ACM v.48, no.3, 2005, pp98-104. Reprint #4407.
Times Cited: 0

Huang, B.; Ahuja, A.; Huang, H. L. 2005: "Lossless Compression of Ultraspectral Sounder Data," *Hyperspectral Data Compression*, edited by G. Motta and J. Storer, Springer-Verlag, 2005.

Hutchison, K.; Roskovensky, J.; Jackson, J.; Pavolonis, M. J.; Frey, R. 2005: Automated cloud detection and typing of data collected by the Visible Infrared Imager Radiometer Suite (VIIRS). In press, *Int. J. Rem. Sens.*

Mecikalski, J. R.; Feltz, W. F.; Murray, J. J.; Johnson, D. B.; Bedka, K. M.; Bedka, S. T.; Wimmers, A. J.; Berendes, T. A.; Pavolonis, M. J. 2005: The Advanced Satellite Aviation Weather Products (ASAP) initiative Phase I efforts 2003-2005. In press, *Bull. Amer. Meteor. Soc.*

Mecikalski, J. R.; Bedka, K. M. 2005: Forecasting convective initiation by monitoring the evolution of moving cumulus in daytime GOES imagery. In press. *Mon. Wea. Rev.*

Mecikalski, J. R.; Bedka, K. M.; Paech, S. J. 2005: Correlating satellite infrared trends, total lightning, and rainfall with convective initiation and development. In press, *Bull. Amer. Meteor. Soc.*, (NOWCAST: Conference Notebook section), **86**, 21-22.

Nalli, Nicholas; Clemente-Colon, Pablo; Morris, Vernon; Joseph, Everette; Szczodrak, Malgorzata; Minnett, Peter J.; Shannahoff, Jonathan; Goldberg, Mitchell D.; Barnet, Chris; Wolf, Walter W.; Feltz, Wayne F., and Knuteson, Robert O. Profile observations of the Saharan air layer during AEROSE 2004. Geophysical Research Letters v.32, no.2005, ppdoi:10.1029/2004GL022028, 2005. Reprint #4406.
Times Cited: 0

Naud, C. M.; Muller, J. P.; Clothiaux, E. E.; Baum, B. A.; Menzel, W. P. 2005: Intercomparison of MODIS, MISR, and radar cloud-top heights. In press, *Annales Geophysicae.*

Niu, J.; Yang, P.; Huang, H. L.; Davies, J. E.; Li, J.; Baum, B. A.; Hu, Y. X. 2005: A fast infrared radiative transfer model for multilayered clouds. In press, *J. Quant. Spectrosc. Radiant. Transfer.*

O'Dell, C.; Heidinger, A.; Greenwald, T.; Bennartz, R. 2005: The Successive Order of Interaction Radiative Transfer Model, Part II: Model Performance and Applications. In press, *J. Appl. Meteor.*

Otkin, J. A.; Anderson, M. C.; Mecikalski, J. R.; Diak, G. R. 2005: Validation of GOES-based insolation estimates using data from the United States Climate Reference Network. In press, *J. Hydrometeor.*

Pavolonis, M. J.; Feltz, W.; Heidinger, A. K. 2005: A daytime compliment to the reverse absorption technique for automated detection of volcanic ash. In Preparation.

Pavolonis, M. J.; Heidinger, A. K.; Uttal, T. 2005: Daytime global cloud typing from AVHRR and VIIRS: Algorithm description, validation, and comparisons. In press, *J. Appl. Meteor.*

Redemann, J.; Schmid, B.; Eilers, J. A.; Kahn, R.; Levy, R. C.; Russell, P. B.; Livingston, J. M.; Hobbs, P. V. ; Smith Jr., W. L.; Holben, B. N. 2005: Suborbital measurements of spectral aerosol optical depth and its variability at sub-satellite-grid scales in support of CLAMS, 2001. *J. Atmos. Sci.*, **62**, 993-1007.

Szczodak, M., P. Minnett, N. Nalli, and W. Feltz, 2005: Measurements of Temperature and Humidity Profiles over the Ocean: Comparisons of AIRS Retrievals with Ship-based Remote Sensing, In Situ Measurements, and ECMWF Analysis. Submitted to *Geo. Res. Letters.*

Smith, W. L. Jr.; Charlock, T. P.; Kahn, R.; Martins, J. V.; Remer, L. A.; Hobbs, P. V.; Redemann, J.; Rutledge, C. K. 2005: EOS-TERRA aerosol and radiative flux validation: An overview of the Chesapeake Lighthouse and Aircraft Measurements for Satellites (CLAMS) experiment. *J. Atmos. Sci.*, **62**, 903-918.

Smith, W. L. Sr.; Zhou, D. K.; Larar, A. M.; Mango, S. A.; Howell, H. B.; Knuteson, R. O.; Revercomb, H. E., and Smith, W. L. Jr. The NPOESS Airborne Sounding Testbed Interferometer - remotely sensed surface and atmospheric conditions during CLAMS. Journal of the Atmospheric Sciences v.62, no.4, 2005, pp1118-1134. Reprint #4405.
Times Cited: 1

Velden, Christopher; Daniels, Jaime; Stettner, David; Santek, David; Key, Jeff; Dunion, Jason ; Holmlund, Kenneth; Dengel, Gail; Bresky, Wayne, and Menzel, Paul. Recent innovations in deriving tropospheric winds

from meteorological satellites. Bulletin of the American Meteorological Society v.86, no.2, 2005, pp205-223. Reprint #4254.
Times Cited: 0

Wang, J.; Christopher, S. A.; Nair, U. S.; Reid, J. S.; Prins, E. M.; Szykman, J.; Hand, J. 2005: Mesoscale Modeling of Central American Smoke Transport to the United States, Part I: "Top-Down" Assessment of Emission Strength and Diurnal Variation Impacts. In press, *JGR*.

Yang, P.; Wei, H.; Huang, H. L.; Baum, B. A.; Hu, Y. X.; Mishchenko, M. I.; Fu, Q. 2005: Scattering and absorption property database of various nonspherical ice particles in the infrared and far-infrared spectral region. In press, *Appl. Opt.*

Zuidema, P.; Baker, B.; Han, Y.; Intrieri, J.; Key, J.; Lawson, P.; Matrosov, S.; Shupe, M.; Stone, R., and Uttal, T. An Arctic springtime mixed-phase cloudy boundary layer observed during SHEBA. Journal of the Atmospheric Sciences v.62, no.1, 2005, pp160-176. Reprint #4258.
Times Cited: 0

2005 Conference Publications

Ackerman, Steven A. and Frey, Richard A. GLI/MODIS cloud mask results, comparisons and validation. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Passive Optical Remote Sensing of the Atmosphere and Clouds IV (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp17-21. Reprint #4213.

Arduini, R. F.; Minnis, P.; Smith Jr., W.L.; Ayers, J. K.; Khaiyer, M.M.; Heck, P.W. 2005: Sensitivity of satellite-retrieved cloud properties to the effective variance of cloud droplet size distribution. In Proceedings of the 15th Atmospheric Radiation Measurement (ARM) Science Team Meeting, ARM-CONF-2005. U.S. Department of Energy, Washington, D.C.

Bennartz, Ralf; O'Dell, Christopher; Greenwald, Thomas, and Heidinger, Andrew. Fast passive microwave radiative transfer in precipitating clouds: Towards direct radiance assimilation. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Microwave Remote Sensing of the Atmosphere and Environment IV (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp33-37. Reprint #4210.

Best, Fred A.; Revercomb, Henry E.; Knuteson, Robert O.; Tobin, David C.; Ellington, Scott D.; Werner, Mark W.; Adler, Douglas P.; Garcia, Raymond K.; Taylor, Joseph K.; Ciganovich, Nick N.; Smith, William L.; Bingham, Gail E.; Elwell, John D., and Scott, Deron K. The Geosynchronous Imaging Fourier Transform Spectrometer (GIFTS) on-board blackbody calibration system. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Multispectral and Hyperspectral Remote Sensing Instruments and Applications II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp77-87. Reprint #4205 (FTIR).

Dedecker, R. G.; Best, F. A.; Feltz, W. F.; Knuteson, R. O., and Revercomb, H. E. The AERI: New deployments, upgrades, and measurement applications. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Multispectral and Hyperspectral Remote Sensing Instruments and Applications II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp489-499. Reprint #4201 (FTIR).

Donahue, David R.; Sapper, John; Heidinger, Andrew; Jelenak, Aleksander, and Kapoor, Vaishali. CLAVR-X

initial operational capability at NESDIS. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 21st, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper 10.2. Reprint #3956.

Feltz, W. F., J. R. Mecikalski, J. J. Murray, D. B. Johnson, K. M. Bedka, S. M. Thomas, A. J. Wimmers, S. A. Ackerman, and C. C. Schmidt, 2005: The Advanced Satellite Aviation-weather Products (ASAP) initiative at the University of Wisconsin - CIMSS, 21st International Conf. on Interactive Information Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, San Diego, CA.

Frey, Richard A.; Ackerman, Steven A.; Liu, Yinghui; Strabala, Kathleen I., and Zhang, Hong. Recent improvements in the MODIS cloud mask. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Passive Optical Remote Sensing of the Atmosphere and Clouds IV (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp219-230. Reprint #4212.

Garcia, Raymond K.; Ackerman, Steven A.; Antonelli, Paolo; Dedecker, Ralph G.; Dutcher, Steven; Howell, H. Ben; Huang, Hung-Lung; Knuteson, Robert O.; Olson, Erik R.; Revercomb, Henry E.; Smuga-Otto, Maciej J., and Tobin, David. A prototype for the GIFTS information processing system. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 21st, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P1.45. Reprint #3953 (FTIR).

Guan, Li; Huang, Jung-Lung; Li, Jun; Weisz, Elisabeth; Baggett, Kevin; Davies, James E., and Gao, Wei. AIRS single field of view cloud detection and cloud property retrieval . International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Passive Optical Remote Sensing of the Atmosphere and Clouds IV (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp239-249. Reprint #4211.

Gurka, James J.; Schmit, Timothy J.; Reynolds, Richard R., and Viets, Patrica. GOES-R user readiness issues: Recommendations from the Third GOES-R Users' Conference. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 21st, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper 3.1. Reprint #3947.

Heidinger, Andrew K.; Goldberg, Mitch D.; Tarpley, Dan; Jelenak, Aleksander, and Pavolonis, Michael. A new AVHRR cloud climatology. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Applications with Weather Satellites II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp197-205. Reprint #4198.

Huang, Bormin; Ahuja, Alok, and Huang, Hung-Lung . Advances in compression of ultraspectral sounder data. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 21st, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P1.36. Reprint #3951 (FTIR).

Huang, Bormin; Ahuja, Alok; Huang, Hung-Lung; Schmit, Timothy J., and Heymann, Roger W. Effects of the starting channel for spectral reordering on the lossless compression of 3D ultraspectral sounder data. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Multispectral and Hyperspectral Remote Sensing Instruments and Applications II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp353-363. Reprint #4203 (FTIR).

Huang, Hung-Lung; Bloom, Hal J.; Puschell, Jeffery J., and Menzel, Paul W. Wedge-filter Imaging Sounder for Humidity (WISH) - A practical NPOESS P31 and geostationary earth orbit high-spatial resolution sensor.

International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Multispectral and Hyperspectral Remote Sensing Instruments and Applications II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp33-40. Reprint #4207.

Huang, Jun; Huang, Hung-Lung Allen; Bennartz, Ralf, and Gumley, Liam E. IMAPP AMSR-E level 1 processing implementation and level 2 products evaluation. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Microwave Remote Sensing of the Atmosphere and Environment IV (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp255-262. Reprint #4209.

Jelenak, Aleksander and Heidinger, Andrew K. Validation of CLAVR-x cloud detection over ocean using AVHRR GAC sea surface temperature. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Applications with Weather Satellites II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp292-298. Reprint #4199.

Knuteson, R. O.; Best, F. A.; Bingham, G. E.; Elwell, J. D.; Revercomb, H. E.; Tobin, D. C.; Scott, D. K.; Taylor, J., and Smith, W. L. On-orbit calibration of the Geosynchronous Imaging Fourier Transform Spectrometer (GIFTS). International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Multispectral and Hyperspectral Remote Sensing Instruments and Applications II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp66-76. Reprint #4191 (FTIR).

Knuteson, Robert; Ackerman, Steve; Best, Fred; Dedecker, Ralph; Garcia, Ray; Olson, Erik; Revercomb, Hank; Smuga-Otto, Maciek, and Tobin, Dave. Calibration algorithm accuracy versus efficiency tradeoffs for a geosynchronous imaging Fourier transform spectrometer. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 21st, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P1.44. Reprint #3952 (FTIR).

Kulie, M., R. Bennartz, C. O'Dell, and M.-J. Kim, 2005: AMSR-E Validation of Winter Precipitation Over the Baltic Sea. AGU Joint Assembly in New Orleans.

Li, Jun; Wang, Fang; Schmit, Timothy J.; Menzel, W. Paul, and Gurka, James. Vertical resolution study on the GOES-R Hyperspectral Environmental Suite (HES). International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Applications with Weather Satellites II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp57-65. Reprint #4200 .

Li, Zhenglong; Li, Jun; Menzel, Paul, and Schmit, Timothy J. Imager capability on cloud classification using MODIS. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 21st, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P1.30. Reprint #3949.

Liu, Chian-Yi; Li, Jun, and Schmit, Timothy J. Retrieval of cloud microphysics from blended MODIS cloud products and AIRS radiance measurements. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 21st, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P1.32. Reprint #3950.

Liu, Xu; Smith, William L.; Zhou, Daniel K., and Larar, Allen. A Principal Component-based Radiative Transfer Forward Model (PCRTM) for hyper spectral sensors. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Multispectral and Hyperspectral Remote Sensing Instruments and

Applications II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp96-105. Reprint #4204 (FTIR).

Mecikalski, John R.; Mackaro, Scott M.; Anderson, Martha C.; Norman, John M., and Basara, Jefrey B. Evaluating the use of the Atmospheric Land Exchange Inverse (ALEXI) model in short-term prediction and mesoscale diagnosis. Conference on Hydrology, 19th, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P3.14. Reprint #3966.

Mecikalski, John R.; Paech, Simon J., and Bedka, Kristopher M. Developing methods to nowcast total lightning flash rates and convective initiation using satellite infrared convective cloud information. Conference on Meteorological Applications of Lightning Data, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P1.5. Reprint #3946.

Menzel, W. Paul; Wylie, Donald P.; Jackson, Darren L., and Bates, John J. Global cloud cover trends inferred from two decades of HIRS observations. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Applications with Weather Satellites II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp283-291. Reprint #4192.

Olson, E. R.; Revercomb, H. E.; Knuteson, R. O.; Howell, H. B.; Werner, M. W., and Garcia, R. K. Vibration induced tilt error model for aircraft interferometer data: Sample position error. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Multispectral and Hyperspectral Remote Sensing Instruments and Applications II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp500-507. Reprint #4190 (FTIR).

Otkin, Jason A.; Anderson, Martha C., and Mecikalski, John R. A 2-year climatology of land-surface energy fluxes using the ALEXI model. Conference on Hydrology, 19th, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P3.24. Reprint #3967 .

Otkin, Jason A.; Anderson, Martha C., and Mecikalski, John R. Multiseasonal validation of GOES-based insolation estimates. Conference on Hydrology, 19th, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P1.34. Reprint #3968.

Otkin, Jason A. and Olson, Erik R. Comparison of simulated top of atmosphere radiance datasets generated from MM5 and WRF numerical simulations. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 21st, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P1.47. Reprint #3955 (FTIR).

Pavolonis, Michael J. and Heidinger, Andrew K. Advancements in identifying cirrus and multilayered cloud systems from operational satellite imagers at night. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Applications with Weather Satellites II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp225-234. Reprint #4196.

Pavolonis, Michael J. and Heidinger, Andrew K. Preliminary global cloud comparisons from AVHRR, MODIS, and GLAS: Cloud amount and cloud overlap. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Applications with Weather Satellites II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp235-244. Reprint #4195.

Puschell, Jeffery J.; Huang, Hung-Lung, and Bloom, Hal J. Design concept for a Sedge-filter Imaging Sounder for Humidity (WISH): A practical NPOESS P31 high spatial resolution sensor. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment,

and Space, Honolulu, Hawaii, 8-11 November 2004. Applications with Weather Satellites II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp277-282. Reprint #4193.

Revercomb, Henry E.; Tobin, David C.; Knuteson, Robert O.; Best, Fred A.; Smith, William L.; van Delst, Paul; LaPorte, Daniel D.; Ellington, Scott D.; Werner, Mark W.; Dedecker, Ralph G.; Garcia, Ray K.; Ciganovich, Nick N.; Howell, H. Benjamin; Olson, Erik; Dutcher, Steven, and Taylor, Joe K. Highly accurate FTIR observations from the scanning HIS aircraft instrument . International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Multispectral and Hyperspectral Remote Sensing Instruments and Applications II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp41-53. Reprint #4206 (FTIR).

Sankovich, Victoria; Shaw, Gregory; Gleason, Jonathan; Newsome, Sherrica; Nguyen, Eric; Ferrare, Richard A.; Browell, Edward V.; Ismail, Syed; Kool, Susan; Brackett, Vince G.; Revercomb, Hank; Knuteson, Bob, and Antonelli, Paolo. Characterization and visualization of water vapor and atmospheric stability during the IHOP field experiment. Symposium on Lidar Atmospheric Applications, 2nd, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P2.4. Reprint #3965 (FTIR).

Schmit, Timothy J.; Gurka, James J.; Gunshor, Mathew M.; Menzel, W. P., and Li, Jun. The Advanced Baseline Imager (ABI) on Geostationary Operational Environmental Satellites (GOES)-R. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 21st, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper 3.2. Reprint #3948.

Smith, W. L. Sr.; Revercomb, H. E.; Zhou, D. K., and Huang, H. L. Hyperspectral sounding - A revolutionary advance in atmospheric remote sensing. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Multispectral and Hyperspectral Remote Sensing Instruments and Applications II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp1-11. Reprint #4208 (FTIR).

Uhlenbrock, Nathan; Ackerman, Steve; Feltz, Wayne; Whittaker, Tom; Shaman, Bob; Gumley, Liam, and Bedka, Kristopher. The use of satellite water vapor imagery and model data to diagnose and forecast turbulent mountain waves. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 21st, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P2.40. Reprint #3957.

Uttal, Tanell; Frisch, Shelby; Wang, Zuanji; Key, Jeff; Schweiger, Axel; Sun-Mack, Sunny, and Minnis, Patrick. Comparison of monthly mean cloud fraction and cloud optical depth determined from surface cloud radar, TOVS, AVHRR, and MODIS over Barrow, Alaska. Conference on Polar Meteorology and Oceanography, 8th, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P1.27. Reprint #3961.

Vinson, Kenneth H.; Revercomb, Henry E.; Knuteson, Robert O.; Tobin, David C.; Dutcher, Steven B.; Best, Fred; Lee, Szu-Chia, and Fetzer, Eric J. Validation of AIRS cloud-cleared radiances using high spectral resolution infrared aircraft observations. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Multispectral and Hyperspectral Remote Sensing Instruments and Applications II (proceedings). Bellingham, WA , International Society for Optical Engineering, (SPIE), 2005, pp470-478. Reprint #4202 (FTIR).

Wang, Fang; Li, Jun, and Schmit, Timothy J. Trade-off study on vertical resolution for high spectral resolution sounder. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 21st, San Diego, CA, 8-13 January 2005 (preprints). Boston, MA, American Meteorological Society, 2005, ppPaper P1.46. Reprint #3954.

Wang, Xuanji and Key, Jeffrey R. Arctic climate characteristics and recent trends from space. International Asia-Pacific Environmental Remote Sensing Symposium, 4th: Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Honolulu, Hawaii, 8-11 November 2004. Applications with Weather Satellites II (proceedings). Bellingham, WA, International Society for Optical Engineering, (SPIE), 2005, pp257-268. Reprint #4194.

Other Publications

Feltz, W. F., D. D. Turner, H. B. Howell, W. L. Smith, R. O. Knuteson, H. M. Woolf, R. Mahon, and T. Halter, 2005: Retrieving temperature and moisture profiles from AERI radiance observations: AERIPROF value added product technical description. DOE ARM Technical Report, TR-066, Available from http://www.arm.gov/publications/tech_reports/ arm-tr-066.pdf

2004 Reviewed Publications

Ahl, Douglas E.; Gover, Stith T.; Mackay, D. Scott; Burrows, Sean N.; Norman, John M., and Diak, George R. Heterogeneity of light use efficiency in a northern Wisconsin forest: Implications for modeling net primary production with remote sensing. Remote Sensing of Environment v.93, no.1-2, 2004, pp168-178. Reprint #4057.
Times Cites: 0

Anderson, Martha C.; Norman, J. M.; Mecikalski, John R.; Torn, Ryan D.; Kustas, William P., and Basara, Jeffrey B. A multiscale remote sensing model for disaggregating regional fluxes to micrometeorological scales. Journal of Hydrometeorology v.5, no.2, 2004, pp343-363. Reprint #3703.
Times Cited: 0

Antonelli, P.; Revercomb, H. E.; Sromovsky, L. A.; Smith, W. L.; Knuteson, R. O.; Tobin, D. C.; Garcia, R. K.; Howell, H. B.; Huang, J.-L., and Best, F. A. A principal component noise filter for high spectral resolution infrared measurements. Journal of Geophysical Research v.109, no.D23, 2004, pp22p. doi: 1029/2003JD004862, 2004. Reprint #3938 (FTIR).
Times Cited: 1

Cooper, O.; Forster, C.; Parrish, D.; Dunlea, E.; Hubler, G.; Fehsenfeld, F.; Holloway, J.; Oltmans, S.; Johnson, B.; Wimmers, A., and Horowitz, L. On the life cycle of a stratospheric intrusion and its dispersion into polluted warm conveyor belts. Journal of Geophysical Research v.109, no.D23 , 2004, pp18p. doi: 1029/2003JD004006, 2004. Reprint #3937.
Times Cited: 8

Diak, George R.; Mecikalski, John R.; Anderson, Martha C.; Norman, John M.; Kustas, William P.; Torn, Ryan D., and DeWolf, Rebecca L. Estimating land surface energy budgets from space: Review and current efforts at the University of Wisconsin-Madison and USDA-ARS. Bulletin of the American Meteorological Society v.85, no.1, 2004, pp65-78. Reprint #3687.
Times Cited: 2

Dunion, Jason P. and Velden, Christopher S. The impact of the Saharan air layer on Atlantic tropical cyclone activity. Bulletin of the American Meteorological Society v.85, no.3, 2004, pp353-365. Reprint #3814.
Times Cited: 3

Grasso, Lewis D. and Greenwald, Thomas J. Analysis of 10.7 micron brightness temperatures of a simulated thunderstorm with two-moment microphysics. Monthly Weather Review v.132, no.3, 2004, pp815-825. Reprint #3706.
Times Cited: 0

Greenwald, Thomas J.; Vukicevic, Tomislava; Grasso, Louis D., and Vonder Haar, Thomas H. Adjoint sensitivity analysis of an observational operator for visible and infrared cloudy-sky radiance assimilation . Quarterly Journal of the Royal Meteorological Society v.130, no.597, 2004, pp685-705. Reprint #3698.
Times Cited: 1

Gultepe, I.; Isaac, G. A.; Key, J.; Intriere, J.; Starr, D. O'C., and Strawbridge, K. B. Dynamical and microphysical characteristics of Arctic clouds using integrated observations collected over SHEBA during the April 1998 FIRD.ACE flights of the Canadian Convair. Meteorology and Atmospheric Physics v.85, no.4, 2004, pp235-263. Reprint #3705.
Times Cited: 0

Gunshor, Mathew M.; Schmit, Timothy J., and Menzel, W. Paul. Intercalibration of the infrared window and water vapor channels on operational geostationary environmental satellites using a single polar-orbiting satellite. Journal of Atmospheric and Oceanic Technology v.21, no.1, 2004, pp61-68. Reprint #3675.

Times Cited: 0

Hall, Dorothy K.; Key, Jeffrey R.; Casey, Kimberly A.; Riggs, George A., and Cavalieri, Donald J. Sea ice surface temperature product from MODIS. IEEE Transactions on Geoscience and Remote Sensing v.42, no.5, 2004, pp1076-1087. Reprint #3924.
Times Cited: 0

Heidinger, Andrew K.; Frey, Richard, and Pavolonis, Michael. Relative merits of the 1.6 and 3.75 micron channels of the AVHRR/3 for cloud detection. Canadian Journal of Remote Sensing v.30, no.2, 2004, pp182-194. Reprint #4222.
Times Cited: 2

Huang, B.; Ahuja, A.; Huang, H. L.; Schmit, T. J.; Heymann, R. W. 2004: "Improvements to predictor-based methods in lossless compression of 3D hyperspectral sounding data via higher moment statistics," *WSEAS Trans. Electronics,* **1**, 299-305.

Huang, B.; Ahuja, A,; Huang, H. L.; Schmit, T. J.; Heymann, R. W. 2004: "Investigation of predictor-based schemes for lossless compression of 3D hyperspectral sounder data," *WSEAS Trans. Systems*, **3**, 2222-2228.

Huang, B.; Ahuja, A.; Huang, H. L.; Schmit, T. J.; Heymann, R. W. 2004: "Mean-removed nearest neighbor reordering based lossless compression of 3D hyperspectral sounder data," *WSEAS Trans. Circuits and Systems*, **3**, 858-866.

Huang, Bormin; Ahuja, Alok; Hung, Hung-Lung; Schmit, Timothy J., and Heymann, Roger W. Lossless compression of three-dimensional hyperspectral sounder data using context-based adaptive lossless image codec with bias-adjusted reordering. Optical Engineering v.43, no.9, 2004, pp2071-2079. Reprint #3773.
Times Cited: 0

Huang, Hung-Lung; Gumley, Liam E.; Strabala, Kathy; Li, Jun; Weisz, Elisabeth; Rink, Thomas ; Baggett, Kevin C.; Davies, James E.; Smith, William L., and Dodge, James C. International MODIS and AIRS Processing Package (IMAPP). Bulletin of the American Meteorological Society v.85, no.2, 2004, pp159-161. Reprint #3695.
Times Cited: 1

Huang, Hung-Lung; Smith, William L.; Li, Jun; Antonelli, Paolo; Wu, Xiangqian; Knuteson, Robert O.; Huang, Bormin, and Osborne, Brian J. Minimum local emissivity variance retrieval of cloud altitude and effective spectral emissivity - simulation and initial verification. Journal of Applied Meteorology v.43, no.5, 2004, pp795-809. Reprint #3753 (FTIR).
Times Cited: 1

Huang, Hung-Lung; Yang, Ping; Wei, Heli; Baum, Bryan A.; Hu, Yongxiang; Antonelli, Paolo, and Ackerman, Steven A. Inference of ice cloud properties from high spectral resolution infrared observations. IEEE Transactions on Geoscience and Remote Sensing v.42, no.4, 2004, pp842-853. Reprint #3923 (FTIR).
Times Cited: 1

Jacobs, J.M.; Anderson, M.C.; Friess, L.C., and Diak, G.R.. Solar radiation, longwave radiation and emergent wetland evapotranspiration estimates from satellite data in Florida, USA. Hydrological Sciences Journal (Journal des Sciences Hydrologiques), 49, 461-476.
Times Cited : 0

Jin, Z.; Charlock, T. P.; Smith Jr., W. L.; Rutledge, K. 2004: A parameterization of ocean surface albedo. *Geophys. Res. Ltrs.*, **31**, Nov. 16, 2004, 4 pp.

Jin, Z.; Charlock, T. P.; Smith, W. L. Jr.; Rutledge, K.; Cota, G.; Kahn, R.; Redemann, J.; Zhang, T,; Rutan, D. A.; Rose, F.; Holben, B. N. 2004: Radiation measurement and modelsimulation for the CLAMS experiment. *J. Atmos. Sci.*, **62**, 1053-1071.

King, Michael D.; Platnick, Steven; Yang, Ping; Arnold, G. Thomas; Gray, Mark A.; Riedi, Jerome C.; Ackerman, Steven A., and Liou, Kuo-Nan. Remote sensing of liquid water and ice cloud optical thickness and effective radius in the Arctic: Application of airborne multispectral MAS data. Journal of Atmospheric and Oceanic Technology v.21, no.6, 2004, pp857-875. Reprint #3735.
Times Cited: 1

Knievel, Jason C.; Nolan, David S., and Kossin, James P. Imbalance in a mesoscale vortex within a midlatitude, continental mesoscale convective system. Journal of the Atmospheric Sciences v.61, no.14, 2004, pp1827-1832. Reprint #3755.
Times Cited: 0

Knuteson, R. O.; Best, F. A.; DeSlover, D. H.; Osborne, B. J.; Revercomb, H. E., and Smith, W. L. Sr. Infrared land surface remote sensing using high spectral resolution aircraft observations. Advances in Space Research v.33, no.7, 2004, pp1114-1119. Reprint #3720 (FTIR).
Times Cited: 0

Knuteson, R. O.; Revercomb, H. E.; Best, F. A.; Ciganovich, N. C.; Dedecker, R. G.; Dirkx, T. P.; Ellington, S. C.; Feltz, W. F.; Garcia, R. K.; Howell, H. B.; Smith, W. L.; Short, J. F., and Tobin, D. C. Atmospheric Emitted Radiance Interferometer, Part I: Instrument design. Journal of Atmospheric and Oceanic Technology v.21, no.12, 2004, pp1763-1776. Reprint #4082 (FTIR).
Times Cited: 3

Knuteson, R. O.; Revercomb, H. E.; Best, F. A.; Ciganovich, N. C.; Dedecker, R. G.; Dirkx, T. P.; Ellington, S. C.; Feltz, W. F.; Garcia, R. K.; Howell, H. B.; Smith, W. L.; Short, J. F., and Tobin, D. C. Atmospheric Emitted Radiance Interferometer, Part II: Instrument performance. Journal of Atmospheric and Oceanic Technology v.21, no.12, 2004, pp1777-1789. Reprint #4083 (FTIR).
Times Cited: 2

Kossin, James P. and Schubert, Wayne H. Mesovortices in Hurricane Isabel. Bulletin of the American Meteorological Society v.85, no.2, 2004, pp151-153. Reprint #3709.
Times Cited: 1

Kossin, James P. and Velden, Christopher P. A pronounced bias in tropical cyclone minimum sea level pressure estimation based on the Dvorak technique. Monthly Weather Review v.132, no.1, 2004, pp165-173. Reprint #3609.
Times Cited: 0

Lee, Yoonkyung; Wahba, Grace, and Ackerman, Steven A. Cloud classification of satellite radiance data by multicategory support vector machines. Journal of Atmospheric and Oceanic Technology v.21, no.2, 2004, pp159-169, corrigendum. Reprint #3697.
Times Cited: 2

Lee, Yoonkyung; Wahba, Grace, and Ackerman, Steven A. Corrigendum. Journal of Atmospheric and Oceanic Technology v.21, 1301-1301.
Times Cited: 0

LeMarshall, J.; Seecamp. R.; Daniels, J.; Velden, C.; Puri, K.; Bowen, R.; Rea, A., and Dunn, M. The contribution of Goes-9 to operational NWP forecast skill in the Australian region. Australian Meteorological Magazine v.53, no.4, 2004, pp279-283. Reprint #4297.
Times Cited: 0

Li, Jun; Menzel, W. Paul; Sun, Fengying; Schmit, Timothy J., and Gurka, James. AIRS subpixel cloud characterization using MODIS cloud products. Journal of Applied Meteorology v.43, no.8, 2004, pp1083-1094. Reprint #3759.
Times Cited: 2

Li, Jun; Menzel, W. Paul; Zhang, Wenjian; Sun, Fengying; Schmit, Timothy J.; Gurka, James J., and Weisz, Elisabeth. Synergistic use of MODIS and AIRS in a variational retrieval of cloud parameters. Journal of Applied Meteorology v.43, no.11, 2004, pp1619-1634. Reprint #3987 (FTIR).
Times Cited: 0

Liu, Yinghui; Key, Jeffrey R.; Frey, Richard A.; Ackerman, Steven A., and Menzel, W. Paul. Nighttime polar cloud detection with MODIS. Remote Sensing of Environment v.92, no.2004, pp181-194. Reprint #3815.
Times Cited: 0

McCourt, M. L.; McMillan, W. W.; Ackerman, S.; Holz, R.; Revercomb, H. E., and Tobin, D. Using the "blue spike" to characterize biomass-burning sites during Southern African Regional Science Initiative (SAFARI) 2000. Journal of Geophysical Research v.109, no.D20, 2004, ppdoi: 1029/2003JD004805, 2004. Reprint #3939 (FTIR).
Times Cited: 0

Mostek, Anthony; Weaver, John; Bikos, Dan; Lindsey, Dan; Zajac, Bard; Bachmeier, Scott; Whittaker, Tom; Motta, Brian; Grant, Brad; LaDue, Jim, and Ferree, John. VISIT: Bringing training to weather service forecasters using a new distance-learning tool. Bulletin of the American Meteorological Society v.85, no.6, 2004, pp823-829. Reprint #3750.
Times Cited: 0

Nasiri, Shaima and Baum, Bryan A. Daytime multilayered cloud detection using multispectral imager data. Journal of Atmospheric and Oceanic Technology v.21, no.8, 2004, pp1145-1155. Reprint #3757.
Times Cited: 1

Pavolonis, Michael J. and Heidinger, Andrew K. Daytime cloud overlap detection from AVHRR and VIIRS. Journal of Applied Meteorology v.43, no.5, 2004, pp762-778. Reprint #3752.
Times Cited: 1

Pavolonis, Michael J.; Key, Jeffrey R., and Cassano, John J. A study of the Antarctic surface energy budget using a polar regional atmospheric model forced with satellite-derived cloud properties. Monthly Weather Review v.132, no.2, 2004, pp654-661. Reprint #3679.
Times Cited: 0

Rabin, R.M.; Corfidi, S.F.; Brunner, J.C., and Hane, C.E. Detecting winds aloft from water vapour satellite imagery in the vicinity of storms. Weather v.59, pp251-257, doi:10.1256/wea.182.83.
Times Cited: 0

Raymond, William H.; Wade, Gary S., and Zapotocny, Tom H. Assimilating GOES brightness temperatures, Part I: Upper-tropospheric moisture. Journal of Applied Meteorology v.43, no.1, 2004, pp17-27. Reprint #3668.
Times Cited: 1

Raymond, William H.; Wade, Gary S., and Zapotocny, Tom H. Assimilating GOES brightness temperatures, Part II: Assigning water vapor wind heights directly from weighting functions. Journal of Applied Meteorology v.43, no.8, 2004, pp1200-1212. Reprint #3758.
Times Cited: 0

Reid, J.S.; Prins, E.M.; Westphal, D.L.; Schmidt, C.C.; Richardson, K.A.; Christopher, S.A.; Eck, T.F.; Reid, E.A.; Curtis, C.A., and Hoffman, J.P. Real-time monitoring of Sout American smoke particle emissions and

transport using a coupled remote sensing/box-model approach. Geophysical Research Letters v.31, doi:10.1029/2003GL018845.
Times Cited: 3

Rozoff, C.M.; Schubert, W.H.; McNoldy, B.D., and Kossin, J.P. Rapid filamentation zones. Bulletin of the American Meteorological Society v.85, pp664-665.
Times Cited: 0

Schaack, Todd; Zapotocny, Tom H.; Lenzen, Allen J., and Johnson, Donald R. Global climate simulation with the University of Wisconsin Global Hybrid Isentropic Coordinate Model. Journal of Climate v.17, no.15, 2004, pp2998-3016. Reprint #3760.
Times Cited: 0

Schmit, T. J.; Gunshor, M. M.; Paul Menzel, W.; Li, J.; Bachmeier, S.; Gurka, J. 2004: Introducing the next-generation advanced baseline imager (ABI) on Geostationary Operational Environmental Satellites (GOES)-R. In press, *Bull. Amer. Meteor. Soc.*

Soden, Brian J.; Turner, David D.; Lesht, Barry M., and Miloshevich, Larry M. An analysis of satellite, radiosonde, and lidar observations of upper tropospheric water vapor from the Atmospheric Radiation Measurement Program. Journal of Geophysical Research v.109, no. D4, 2004, ppD04105 (1-19). doi:10.1029/2003JD003828, 2004. Reprint #3701.
Times Cited: 6

Thomas, Sarah M.; Heidinger, Andrew K., and Pavolonis, Michael J. Comparison of NOAA's operational AVHRR-derived cloud amount to other satellite-derived cloud climatologies. Journal of Climate v.17, no.24, 2004, pp4805-4822. Reprint #3992.
Times Cited: 0

Turner, D. D.; Tobin, D. C.; Clough, S. A.; Brown, P. D.; Ellingson, R. G.; Mlawer, E. J.; Knuteson, R. O.; Revercomb, H. E.; Shippert, T. R.; Smith, W. L., and Shephard, M. W. The QME AERI LBLRTM: A closure experiment for downwelling high spectral resolution infrared radiance. Journal of the Atmospheric Sciences v.61, no.22, 2004, pp2657-2675. Reprint #3993 (FTIR).
Times Cited: 3

Vukicevic, T.; Greenwald, T.; Zupanski, M.; Zupanski, D.; Vonder Haar, T., and Jones, A. S. Mesoscale cloud state estimation from visible and infrared satellite radiances. Monthly Weather Review v.132, no.12, 2004, pp3066-3077. Reprint #3988.
Times Cited: 1

Weaver, John F.; Lindsey, Dan; Bikos, Dan; Schmidt, Chris C., and Prins, Elaine. Fire detection using GOES rapid scan imagery. Weather and Forecasting v.19, no.3, 2004, pp496-510. Reprint #4373.
Times Cited: 0

Weckwerth, Tammy M.; Parsons, David B.; Koch, Steven E.; Moore, James A.; LeMone, Margaret A.; Demoz, Belay B.; Flamant, Cyrille; Geerts, Bart; Wang, Jungong, and Feltz, Wayne F. An overview of the International H2O Project (IHOP_2002) and some preliminary highlights. Bulletin of the American Meteorological Society v.85, no.2, 2004, pp253-277. Reprint #3696.
Times Cited: 9

Wei, Heli; Yang, Ping; Li, Jun; Baum, Bryan A.; Hung, Hung-Lung; Platnick, Steven; Hu, Yongxiang, and Strow, Larrabee. Retrieval of semitransparent ice cloud optical thickness from Atmospheric Infrared Sounder (AIRS) measurements. IEEE Transactions on Geoscience and Remote Sensing v.42, no.10, 2004, pp2254-2267. Reprint #3895 (FTIR).
Times Cited: 1

Wimmers, A. J. and Moody, J. L. Tropopause folding at satellite-observed spatial gradients: 1: Verification of an empirical relationship. Journal of Geophysical Research v.109, no.D19, 2004, pp12p. doi: 1029/2003JD004145, 2004. Reprint #3935.
Times Cited : 1

Wimmers, A. J. and Moody, J. L. Tropopause folding at satellite-observed spatial gradients: 2: Development of an empirical model. Journal of Geophysical Research v.109, no.D19, 2004, pp11p. doi: 1029/2003JD004146, 2004. Reprint #3936.
Times Cited: 1

Yang, P.; Mlynczak, M.G.; Wei, H.; Dratz, D.P.; Baum, B.A.; Hu, Y.X.; Wiscombe, W.J.; Heidinger, A., and Mishchenko, M.I. Spectral signature of ice clouds in the far-infrared region: Single-scattering calculations and radiative sensitivity study. Journal of Geophysical Research-Atmospheres v.108, 4569.
Times Cited: 0

Yang, Ping; Zhang, Zhibo; Baum, Bryan A.; Hung, Hung-Lung, and Hu, Yongxiang. A new look at anomalous diffraction theory (ADT): Algorithm in cumulative projected-area distribution domain and modified ADT. Journal of Quantitative Spectroscopy and Radiative Transfer v.89, no.1-4, 2004, pp421-442. Reprint #4168.
Times Cited: 0

Zhang, Zhibo; Yang, Ping; Kattawar, George W.; Tsay, Si-Chee; Baum, Bryan A.; Hu, Yongxiang; Heymsfield, Andrew J., and Reichart, Jens. Geometrical-optics solution to light scattering by droxtal ice crystals. Applied Optics v.43, no.12, 2004, pp2490-2499. Reprint #3818.
Times Cited: 2

2004 Conference Publications

Achtor, T.H., and Saunders, R. Activities of the International TOVS Working Group (ITWG). Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 19-23 September 2004. Boston, MA, American Meteorological Society, 2004.

Ackerman, S.A., and Evans, K. Satellite observations of cloud ice properties. Conference on Satellite Meteorology and Oceanogrphy, 13th, Norfolk, VA, 19-23 September 2004. Boston, American Meteorological Society, 2004.

Ackerman, Steven A.; Huang, Hung-Lung; Antonelli, Paolo; Holz, Robert; Revercomb, Henry; Tobin, David; Baggett, Kevin, and Davies, James. Detection of clouds and aerosols using infrared hyperspectral observations. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.23. Reprint #3641 (FTIR).

Ackerman, S.A. and Whittaker, T. Interactive Java applets for education. Symposium on Education, 13th, Seattle, WA, 11-15 January 2004 (preprints). Combined Preprints. 84th AMS Annual Meeting. Manuscript not available for publication. Boston, MA, American Meteorological Society, 2004.

Antonelli, Paolo ; Cherubini, T. ; Revercomb, H. ; Businger, S. ; Knuteson, R. ; Posselt, D., and Ackerman, S. Comparision of S-HIS temperature and water vapor retrievals to MM5 derived fields for THORPEX 2003. Symposium on Integrated Observing and Assimilation Systems for Atmosphere, Oceans, and Land Surface, 8th, Seattle, WA, 11-15 January 2004. Combined Preprints. 84th AMS Annual Meeting, Manuscript not available for publication. Boston, MA, American Meteorological Society, 2004.

Antonelli, P.; Revercomb, H.; Knuteson, R.; Sromovsky, Larry; Huang, A.; Garcia, Ray; Howell, Ben; Tobin, D.; Best, F.; Episcopo, R.; Galdi, L.; di Bisceglie, M., and Smith W. PCA based information content studies

from high spectral resolution infrared observations. ECMWF Workshop on Assimilation of High Spectral Resolution Sounders in NWP, Reading, UK, 28 June-1 July 2004. ECMWF Workshop Proceedings. Reading, UK, European Centre for Medium-range Weather Forecasts (ECMWF), 2004, pp223-238. Reprint #4151 (FTIR).

Ardanuy, Phillip E.; Bergen, William R.; Gray, Gary E.; Hickey, Tom; Huang, Hung-Lung Allen; Marley, Steve; Puschell, Jeffery J., and Schueler, Carl. NPOESS and GOES-R - Building a "system of systems". Symposium on Integrated Observing and Assimilation Systems for Atmosphere, Oceans, and Land Surface, 8th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 4.5. Reprint #3626.

Aschbrenner, Ryan; Petty, Grant W., and Huang, Hung-Lung. Development and intercomparison of AMSU rain rate algorithms. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P8.23. Reprint #3813.

Aune, Robert M. and Petersen, Ralph. An objective nowcasting tool that incorporates geostationary satellite measurements. Symposium on Planning, Nowcasting, and Forecasting in the Urban Zone, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 1.11. Reprint #3612.

Bedka, K. M. and Mecikalski, J. M. Nowcasting convective initiation and thunderstorm characteristics through the use of real-time geostationary satellite information. 2004 EUMETSAT Meteorological Satellite Conference, Prague, Czech Republic, 31 May-6 April 2004. Proceedings. Darmstadt, Germany, European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), 2004, pp218-225. Reprint #4270.

Bedka, Kristopher; Mecikalski, John R., and Feltz, Wayne F. Analysis of convective clouds and turbulent boundary layers using hyperspectral data. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.25. Reprint #3643.

Bedka, Kristopher M.; Mecikalski, John R., and Berendes, Todd A. Forecasting convective initiation by monitoring the evolution of moving cumulus in daytime GOES imagery. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P4.8. Reprint #3793.

Berger, Howard; Forsythe, Mary; Eyre, John, and Healy, Sean. A superobbing scheme for atmospheric motion vectors. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P3.11. Reprint #3789.

Best, F. A.; Adler, D. P.; Ciganovich, N. N.; Dedecker, R. G.; Knuteson, R. O., and Revercomb, H. E. Catastrophic failures and a robust fix of the Atmospheric Emitted Radiance Interferometer (AERI) detector dewars. Atmospheric Radiation Measurement (ARM) Science Team Meeting, 14th, Albuquerque, NM, 22-26 March 2004. Proceedings. Washington, DC, US Department of Energy, Office of Energy Research, Office of Health and Environmental Research, Environmental Sciences Division, 2004, ppPDF from website. Reprint #3918 (FTIR).

Black, Michael; Dunion, Jason; Kossin, James; Schubert, Wayne; Velden, Chris; Black, Peter; Zehr, Raymond, and Aberson, Sim. Mesovortices in Hurricane Isabel (2003); A comparison of satellite, radar, and photographic observations. Conference on Hurricanes and Tropical Meteorology, 26th, Miami, FL, 3-7 May 2004 (preprints). Boston, MA, American Meteorological Society, 2004, pp128-129. Reprint #3976.

Chen, Yan; Sun-Mack, Sunny; Minnis, Patrick; Young, David F., and Smith, William L. Jr. Seasonal surface spectral emissivity derived from TERRA MODIS data. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological

Society, 2004, ppPaper P8.10. Reprint #3811.

Comstock, J. M.; McFarlane, S. A.; Turner, D. D. ; d'Entremon, R.; DeSlover, D. H.; Mace, G. G. ; Matrosov, S. Y.; Shupe, M. D.; Mitchell, D.; Sassen, K., and Wang, Z. High clouds microphysical retrievals intercomparison. Atmospheric Radiation Measurement (ARM) Science Team Meeting, 14th, Albuquerque, NM, 22-26 March 2004. Proceedings. Washington, DC, US Department of Energy, Office of Energy Research, Office of Health and Environmental Research, Environmental Sciences Division, 2004, ppPDF from website. Reprint #3920 (FTIR).

Daniels, Jaime; Velden, Chris, and Menzel, W. Paul. 2002/2003 report on NOAA/NESDIS satellite -derived winds. Report of the 32nd Meeting of the Coordination Group for Meteorological Satellites (CGMS XXXII), Sochi, Russian Federation, 17-20 May 2004. Darmstadt, Germany, European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), 2004, ppNOAA-WP-28. Reprint #4386.

Daniels, Jaime M.; Velden, Christopher; Bresky, Wayne, and Irving, Antonio. Status of the NOAA/NESDIS operational satellite wind product system: Recent improvements, new products, product quality, and future plans. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P5.8. Reprint #3797.

Davies, James E.; Wei, Heli; Yang, Ping; Huang, Hung-Lung; Turner, David D.; Olson, Erik R., and Posselt, Derek J. Fast model cloudy radiances for infrared hyperspectral observations. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.26. Reprint #3644 (FTIR).

Dedecker, Ralph G.; Whittaker, Tom; Garcia, Ray K., and Knuteson, Robert O. A system design for storing, archiving, and retrieving hyperspectral data. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.31. Reprint #3649 (FTIR).

Dunion, Jason P.; Velden, Christopher S.; Hawkins, Jeffrey D., and Parrish, Jack R. The Saharan air layer-insights from the 2002 and 2003 Atlantic hurricane seasons. Conference on Hurricanes and Tropical Meteorology, 26th, Miami, FL, 3-7 May 2004 (preprints). Boston, MA, American Meteorological Society, 2004, pp495-496. Reprint #3983.

Dutcher, Steven T.; Garcia, Ray K.; Dedecker, Ralph G.; Knuteson, Robert O.; Smuga-Otto, Meciek; Hackel, Denny J.; Nasiri, Shaima, and Antonelli, Paolo. Hyperspectral data storage: Prototype implementation using the 2003 Pacific THORPEX dataset. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.30. Reprint #3648 (FTIR).

Evan, Amato T.; Keidinger, Andrew K., and Pavolonis, Michael J. A new algorithm for dust detection over water utilizing the AVHRR imager. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P5.18. Reprint #3800.

Feltz, Wayne F.; Howell, Hugh B.; Turner, David D.; Dedecker, Ralph G.; Woolf, Harold M.; Knuteson, Robert O.; Revercomb, Hank, and Bedka, Kris. Improvement in groundbased infrared hyperspectral retrieval of thermodynamic profiles. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.27. Reprint #3645 (FTIR).

Feltz, Wayne F.; Mecikalski, John R.; Murray, John J.; Johnson, David B.; Bedka, Kristopher; Thomas, Sarah M.; Wimmers, Anthony J.; Ackerman, Steven; Schmidt, Christopher C.; Richards, Mike, and Ulhenbrock,

Nate. The Advanced Satellite Aviation-weather Products (ASAP) initiative at the University of Wisconsin - CIMSS. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P5.6. Reprint #3795.

Ferrare, R. A.; Browell, E. V.; Ismail, S.; Koot, S. A.; Brasseur, L. H.; Brackett, V. G.; Clayton, M. B.; Barrick. J. D. W.; Kiskin, G. S. ; Goldsmith, J. E. M.; Lesht, B. M.; Podolske, J. R.; Sachse, G. W.; Schmidlin, F. J.; Turner, D. D.; Whiteman, D. N.; Tobin, D.; Miloshevich, L. M.; Revercomb, H. E.; Demoz, B. B., and Di Girolamo, P. Characterization of upper-troposphere water vapor measurements during AFEWX using LASE. Journal of Atmospheric and Oceanic Technology v.21, no.12, 2004, pp1790-1808. Reprint #4084 (FTIR).

Ferrare, Richard A.; Browell, Edward V.; Ismail, Syed; Kooi, Susan; Brackett, Vince G.; Revercomb, Hank; Knuteson, Bob; Antonelli, Paolo; Thompson, Jerald D.; Saavedra, Maria, and Misch, Noah. Characterization and visualization of water vapor and aerosol fields over the southern Great Plains during the IHOP field experiment. Symposium on Integrated Observing and Assimilation Systems for Atmosphere, Oceans, and Land Surface, 8th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P1.5. Reprint #3628 (FTIR).

Garcia, Raymond K. and Smuga-Otto, Maciek J. Design studies for real-time distributed processing of infrared hyperspectral image data. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.22. Reprint #3640 (FTIR).

Gray, Gary E.; Daniels, Jaime M.; Krasowski, Gregory S.; Liu, Yuping, and Schmit, Timothy J. The new operational GOES Merged Sounder Product System (MSPS) at NOAA/NESDIS. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P5.13. Reprint #3798.

Greenwald, Thomas; Bennartz, Ralf; Heidinger, Andrew, and O'Dell, Chris. Radiative transfer model development for operational global assimilation of passive microwave radiances in precipitating clouds. Symposium on Integrated Observing and Assimilation Systems for Atmosphere, Oceans, and Land Surface, 8th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P1.2. Reprint #3627.

Greenwald, Thomas; Bennartz, Ralf; O'Dell, Chris , and Heidinger, Andrew. Validation of global simulations of microwave and infrared brightness temperatures using AMSR and AIRS data. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P3.14. Reprint #3790.

Gunshor, Mathew M.; Le Morzadec, Kevin; Schmit, Timothy J.; Menzel, W. Paul, and Tobin, David. Addressing spectral gaps when using AIRS for intercalibration of operational geostationary imagers. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P5.15. Reprint #3799 (FTIR).

Gunshor, Mathew M.; Schmit, Timothy J., and Menzel, W. Paul. Intercalibration of operational geostationary imagers and polar-orbiting AIRS. Report of the 32nd Meeting of the Coordination Group for Meteorological Satellites (CGMS XXXII), Sochi, Russian Federation, 17-20 May 2004. Darmstadt, Germany, European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), 2004, ppNOAA-WP-20. Reprint #4383.

Gurka, James and Schmit, Timothy J. Baseline instruments planned for the GOES-R series. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P1.5. Reprint #3777.

Gurka, James J.; Dittberner, Gerald J.; Schmit, Timothy J.; Menzel, W. P.; Gunshor, Mathew M., and Karnauskas, Kris. Plans for the GOES-R series and comparing the Advanced Baseline Imager to that on

Meteosat-8. 2004 EUMETSAT Meteorological Satellite Conference, Prague, Czech Republic, 31 May-6 April 2004. Proceedings. Darmstadt, Germany, European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), 2004, pp25-30. Reprint #4272.

Gurka, James J.; Schmit, Timothy J., and Reynolds, Richard R. Highlights from the second GOES User's Conference: Recommendations for the GOES-R series. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.1. Reprint #3637.

Heidinger, A.K.; Goldberg, M.; Tarpley, A.; Jelenak, and Pavolonis, M. Initial trends in cloud amount from the AVHRR Pathfinder Atmospheres Extended Data Set. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 19-23 September 2004. Boston, American Meteorological Society, 2004.

Herndon, Derrick C.; Velden, Chris; Brueske, Kurt; Wacker, Robert, and Kabat, Brian. Upgrades to the UW-CIMSS AMSU-based tropical cyclone intensity estimation algorithm. Conference on Hurricanes and Tropical Meteorology, 26th, Miami, FL, 3-7 May 2004 (preprints). Boston, MA, American Meteorological Society, 2004, pp118-119. Reprint #3975.

Hillger, Donald W. and Schmit, Timothy J. Quantization noise from GOES-R ABI bands. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P1.7. Reprint #3779.

Holz, Robert E.; Antonelli, P., and Ackerman, S. A new cloud top retrieval algorithm to determine cloud top pressure using high spectral resolution infrared measurements.International Conference on Interactive Information and Processing Systems (IIPS), 20th, Seattle, WA, 10-16 January 2004. Boston, MA, American Meteorological Society, 2004.

Holz, Robert E.; Antonelli, Paolo; Ackerman, Steve; Nagel, Fred, and McGill, Matthew. A comparison of high spectral resolution infrared cloud top pressure algorithms using S-HIS measurements. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P7.19. Reprint #3808 (FTIR).

Huang, B.; Ahuja, A.; Huang, H.-L.; Schmit, T., and Heymann, R. Comparison of arithmetic coding and prefix coding with the CCSDS lossless compression recommendation for satellite data. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004.

Huang, Bormin; Huang, Hung-Lung; Ahuja, Alok; Chen, Hao; Schmit, Timothy J., and Heymann, Roger W. Lossless data compression for infrared hyperspectral sounders - An overview. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.29. Reprint #3647.

Huang, Bormin; Huang, Hung-Lung; Chen, Hao; Ahuja, Alok; Baggett, Kevin; Schmit, Timothy J., and Heymann, Roger W. Data compression studies for NOAA Hyperspectral Environmental Suite (HES) using 3D integer wavelet transforms with 3D partitioning in hierarchical trees. Image and Signal Processing for Remote Sensing IX, Barcelona, Spain, 9-12 September 2003. Bellingham, WA, International Society for Optical Engineering, (SPIE), 2004, pp255-265. Reprint #3700.

Huang, Hung-Lung and Smith, William L. Apperception of clouds in AIRS data. ECMWF Workshop on Assimilation of High Spectral Resolution Sounders in NWP, Reading, UK, 28 June-1 July 2004. ECMWF Workshop Proceedings. Reading, UK, European Centre for Medium-range Weather Forecasts (ECMWF), 2004, pp155-169. Reprint #4152 (FTIR).

Huang, Hung-Lung; Velden, Chris; Li, Jun; Weisz, Elisabeth; Baggett, Kevin; Davies, James E.; Mecikalski,

John; Huang, Bormin; Dengel, Russ; Ackerman, Steven A.; Olson, Erik R.; Knuteson, Robert O.; Tobin, Dave; Moy, Leslie; Otkin, Jason A.; Posselt, Derek J.; Revercomb, Hank E., and Smith, William L. Infrared hyperspectral sounding modeling and processing: An overview. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 14.4. Reprint #3633 (FTIR).

Huang, Hung-Lung; Yang, Ping; Wei, He-Li; Baum, Bryan A.; Hu, Yongxiang; Antonelli, Paolo, and Ackerman, Steven A. Hyperspectral infrared ice cloud property retrieval demonstration - Theoretical and case study analysis. Symposium on Integrated Observing and Assimilation Systems for Atmosphere, Oceans, and Land Surface, 8th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.20. Reprint #3629 (FTIR).

Jones, Sarah C.; Velden, Christopher S.; Aberson, Sim; Abraham, Jim, and Karr, Patrick A. Extratropical transition and THORPEX. Conference on Hurricanes and Tropical Meteorology, 26th, Miami, FL, 3-7 May 2004 (preprints). Boston, MA, American Meteorological Society, 2004, pp643-644. Reprint #3986.

Jung, James A.; Schreiner, Anthony J.; Feltz, Wayne F.; Thomas, Sarah M.; Schmit, Timothy J., and Daniels, Jaimie M. Improvements to the GOES-12 imager cloud product. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P7.4. Reprint #3805.

Jung, James A.; Zapotocny, Tom H.; Menzel, W. Paul, and Nelson, James P. III. Regional and global NWP observing system data denial experiments using NCEP operational models. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P3.3. Reprint #3786.

Key, Jeffrey R.; Santek, David; Velden, Christopher S.; Daniels, Jaime, and Menzel, W. Paul. Cloud-drift and water vapor winds in the polar regions from MODIS and AIRS. Report of the 32nd Meeting of the Coordination Group for Meteorological Satellites (CGMS XXXII), Sochi, Russian Federation, 17-20 May 2004. Darmstadt, Germany, European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), 2004, ppNOAA-WP-25. Reprint #4384.

Key, Jeffrey R.; Santek, David; Velden, Christopher S.; Daniels, Jaime, and Menzel, W. Paul. Polar winds from current and future satellite imagers and sounders. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004.

Khaiyer; Mandana M.; Nordeen, Michele L.; Doelling, David R.; Chakrapani, Venkatasan; Minnis, Patrick, and Smith, William L. Jr. Validation of GOES-9 satellite-derived cloud properties over the tropical Western Pacific Region. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P7.6. Reprint #3806.

Kim, Dongsoo; Koch, Steve, and van Delst, Paul. Quantification of errors in satellite data assimilation. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P3.8. Reprint #3788.

Kittaka, C.; Szykman, J.; Pierce, B.; Al-Saadi, J.; Neil, D.; Chu, A.; Remer, L.; Prins, E., and Holdzkom. Utilizing MODIS satellite observations to monitor and analyze fine particulate matter, PM2.5 transport event. Conference on Atmospheric Chemistry: Air Quality in Megacities, Seattle, WA, 10-16 January 2004. Boston, MA, American Meteorological Society, 2004.

Knippertz, Peter and Mecikalski, John R. Re-examining tropical plumes and subtropical jet streaks. Conference on Hurricanes and Tropical Meteorology, 26th, Miami, FL, 3-7 May 2004 (preprints). Boston, MA, American Meteorological Society, 2004, pp326-327. Reprint #3980.

Knox, John A. and Ackerman, Steven A. What should we teach in introductory meteorology? Let's ask the students! Symposium on Education, 13th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 4.1. Reprint #3622.

Knuteson, R. O.; Best, F. A.; Dedecker, R. G.; Feltz, W. F.; Revercomb, H. E., and Tobin, D. C. 10 years of AERI data from the DOE ARM Southern Great Plains site. Atmospheric Radiation Measurement (ARM) Science Team Meeting, 14th, Albuquerque, NM, 22-26 March 2004. Proceedings. Washington, DC, US Department of Energy, Office of Energy Research, Office of Health and Environmental Research, Environmental Sciences Division, 2004, ppPDF from website. Reprint #3917 (FTIR).

Knuteson, Robert; Best, Fred; Dedecker, Ralph; Garcia, Ray; Limaye, Sanjay; Olson, Erik; Revercomb, Hank, and Tobin, David. Level 0-1 algorithm description for the Geosynchronous Imaging Fourier Transform Spectrometer . International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.33. Reprint #3651 (FTIR).

Knuteson, Robert; Best, Fred; Osborne, Brian; Revercomb, Henry, and Tobin, David. Land surface temperature and emissivity from infrared hyperspectral observations. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.28. Reprint #3646 (FTIR).

Knuteson, Robert O. and Revercomb, Henry E. Land surface temperature and emissivity from advanced sounders. 2004 EUMETSAT Meteorological Satellite Conference, Prague, Czech Republic, 31 May-6 April 2004. Proceedings. Darmstadt, Germany, European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), 2004, pp241-247. Reprint #4269 (FTIR).

Kossin, James P.; Schubert, Wayne H.; Velden, Chris; Black, Michael; Black, Peter; Zehr, Raymond; Aberson, Sim, and Dunion, Jason. Mesovortices in Hurricane Isabel (2003). Conference on Hurricanes and Tropical Meteorology, 26th, Miami, FL, 3-7 May 2004 (preprints). Boston, MA, American Meteorological Society, 2004, pp447-448. Reprint #3982.

Li, Jun; Menzel, W. Paul; Schmit, Timothy J.; Li, Zhenglong, and Gurka, James. Cloud classification and cloud property retrieval from MODIS and AIRS. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 6.4. Reprint #3776.

Li, Jun; Nelson, James P. III; Schmidt, Christopher C.; Schmit, Timothy J.; Menzel, W. Paul; Seemann, Suzanne, and Borbas, Eva. An approach to improvement temperature and moisture retrievals from the GOES sounder measurements. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P8.5. Reprint #3810.

Li, Jun; Schmit, Timothy J.; Liu, Chiân-Yi; Menzel, W. Paul, and Gurka, James. Studies on the GOES-R Hyperspectral Environmental Suite (HES) on GOES-R. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P1.11. Reprint #3781.

Li, Jun; Sun, Fengying; Schmit, Timothy J.; Menzel, W. Paul, and Gurka, James. Study of the Hyperspectral Environmental Suite (HES) on GOES-R. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.21. Reprint #3639.

Li, Jun; Sun, Fengying; Seemann, Suzanne; Weisz, Elisabeth, and Huang, Hung-Lung. GIFTS sounding

retrieval algorithm development. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.32. Reprint #3650 (FTIR).

Limaye, Sanjay; Smith, Todd; Knuteson, Robert O. , and Revercomb, Henry E. Geolocation of the Geosynchronous Imaging Fourier Transform Spectrometer (GIFTS) data. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.34. Reprint #3652 (FTIR).

Lindsey, Daniel T.; Bikos, Dan; Mostek, Anthony; Bachmeier, Scott; Whittaker, Tom; Weaver, John; Grant, Brad, and LaDue, Jim. VISIT - Providing teletraining for operational forecasters. Symposium on Education, 13th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 3.2. Reprint #3621.

Liu, Chian-Yi; Li, Jun, and Schmit, Timothy J. The Hyperspectral Environmental Suite (HES) simulation study using MM5 data. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P1.12. Reprint #3782.

Liu, Yinghui and Key, Jeffrey R. Spatial and temporal characteristics of satellite-derived clear-sky atmospheric temperature inversions in the polar regions. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P6.26. Reprint #3802.

McGarragh, G.R.; Nasiri, S., and Baum, B. The effect of multilayered clouds on cloud pressure retrievals in near-global MODIS data. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004.

Mecikalski, John R.; Anderson, Martha C.; Otkin, Jason A., and Norman, John M. Regional scale energy and water flux climatologies as derived from remote sensing inputs and a land-exchange model. Joint Poster Session JP4: Land-Atmosphere Interactions. Joint Session with Symposium on Global Change and Climate Variations, 15th, and Conference on Hydrology, 18th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper JP4.3. Reprint #3618.

Mecikalski, John R.; Berendes, Todd A.; Nair, U. S.; Feltz, Wayne F.; Bedka, Kristopher M.; Paech, Simon J.; Murray, John J., and Johnson, David B. The Advanced Satellite Aviation-weather Products (ASAP) initiative: Phase I efforts at the University of Alabama in Huntsville. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P5.7. Reprint #3796.

Mecikalski, John R.; Paech, Simon J., and Bedka, Kristopher M. Correlating satellite infrared trends, total lightning flash rates, and rainfall to convective initiation, development and evolution. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.18. Reprint #3785.

Minnis, Patrick; Nguyen, Louis; Smith, William Jr.; Young, David; Khaiyer, Mandana; Palikonda, Rabindra; Spangenberg, Douglas; Doelling, Dave; Phan, Dung; Novwicki, Greg; Ayers, Kirk; Heck, Patrick W., and Wolff, Cory. Real-time cloud, radiation, and aircraft icing parameters from GOES over the sea. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P7.1. Reprint #3804.

Minnis, Patrick; Young, David F.; Sun-Mack, Sunny; Trepte, Qing T.; Chen, Yan; Brown, Richard R.; Gibson, Sharon, and Heck, Patrick W. Diurnal, seasonal, and interannual variations of cloud properties derived for CERES from imager data. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23

September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P6.10. Reprint #3801.

Moody, J.L.; Pierce, R.; Wimmers, A.; Fairlie, T., and Browell, E. Using GOES layer average specific humidity (GLASH) and Lagrangian reverse domain filling trajectories to forecast Stratospheric/Tropospheric Exchange (STE). Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004.

Mooney, Margaret; Ackerman, Steven A.; Achtor, Thomas H., and Brunner, Jason. Development of satellite meteorology teaching materials for grades 7-12. Symposium on Education, 13th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 1.10. Reprint #3620.

Moy, Leslie; Tobin, Dave; van Delst, Paul, and Woolf, Hal. Clear sky forward model development for GIFTS. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.35. Reprint #3653 (FTIR).

Murray, Don; Whittaker, Tom; McWhirter, Jeff, and Wier, Stuart. Integrating GIS data with geoscience data in Unidata's IDV. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 17.5. Reprint #3635.

Nalli, Nicholas R.; Clement-Colon, P.; Minnett, P.; Szczodrak, M.; Jessup, A.; Branch, R.; Morris, V.; Goldberg, M.; Barnet, C.; Wolf, W.; Joseph, E.; Ignatov, A.; Feltz, W.; Knuteson, R., and Bedka, K. The 2004 Aerosol and Ocean Science Expedition (AEROSE): A unique dataset for infrared satellite validation. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.8. Reprint #3784 (FTIR).

Nasiri, Shaima L. and McGarragh, Greg R. The effects of multilayer clouds on MODIS cloud effective radius and optical thickness retrievals. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P7.13. Reprint #3807.

Naud, Catherine; Baum, Bryan; Bennartz, Ralf; Fischer, Juergen; Frey, Richard; Menzel, Paul; Muller, Jan-Peter; Preusker, Rene, and Zhang, Hong. Inter-comparison of MERIS, MODIS and MISR cloud top heights. MERIS User Workshop, ESA ESRIN, Frascati, Italy, 10-13 November 2003. Proceedings. Noordwijk, The Netherlands, European Space Agency (ESA), 2004, ppReprint #4124.

Nelson, James P. III; Wade, Gary S.; Schreiner, Anthony J.; Schmit, Timothy J.; Feltz, Wayne F., and Schmidt, Christopher C. A study of data and products from the GOES-9 Imager and Sounder over the Western Pacific Ocean. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.5. Reprint #3638.

Olander, Timothy L. and Velden, Christopher S. The Advanced Objective Dvorak Technique (AODT) - continuing the journey. Conference on Hurricanes and Tropical Meteorology, 26th, Miami, FL, 3-7 May 2004 (preprints). Boston, MA, American Meteorological Society, 2004, pp224-225. Reprint #3977.

Olander, Timothy L.; Velden, Christopher S., and Kossin, James P. The Advanced Objective Dvorak Technique (AOCT): Latest upgrades and future directions. Conference on Hurricanes and Tropical Meteorology, 26th, Miami, FL, 3-7 May 2004 (preprints). Boston, MA, American Meteorological Society, 2004, pp294-295. Reprint #3979.

Olson, Erik R.; Knuteson, Robert O.; Revercomb, Hank E.; Li, Jun, and Huang, Hung-Lung. Quantization of far field diffraction and focal plane misalignment effects on simulated GIFTS data from the IHOP field

experiment. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.38. Reprint #3656 (FTIR).

Otkin, Jason A.; Posselt, Derek J.; Olson, Erik R.; Davies, James E.; Feltz, Wayne F.; Knuteson, Robert O., and Mecikalski, John R. Generation of simulated top of atmosphere radiance datasets for GIFTS/HES algorithm development. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.36. Reprint #3654.

Plokhenko, Youri, and Menzel, W.P. Observation of surface emissivity influence on hyperspectral infrared measurements from the AIRS instrument of the AQUA satellite. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004. Combined preprints. 84th AMS Annual Meeting. Manuscript not available for publication. Boston, MA, American Meteorological Society, 2004.

Prins, Elaine M.; McNamara, Donna, and Schmidt, Christopher C. Global geostationary fire monitoring system. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P4.6. Reprint #3791.

Pryor, Anne; Ackerman, Steven A.; Mooney, Margaret; Leary, James P.; DeRose, Holly; Holwerk, Loui; Karnauskas, Kristopher; Schmidt, Clair, and Yuenger, Jamie. Wisconsin weather stories. Symposium on Education, 13th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P1.8. Reprint #3623.

Rabin, Robert M. Nowcasting thunderstorm intensity from satellite: A review. 2004 EUMETSAT Meteorological Satellite Conference, Prague, Czech Republic, 31 May-6 April 2004. Proceedings. Darmstadt, Germany, European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), 2004, pp180-188. Reprint #4271.

Revercomb, Henry E.; Ackerman, S.A.; Best, F.; Dedecker, R.; Feltz, W.; Garcia, R.K.; Huang, H.-L.; Knuteson, R.O.; Li, J.; Tobin, D.; Velden, C.S., and Smith, W.L. The path to high spectral resolution IR observing: Looking backward and foreward as a new era begins with AIRS. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004. Combined Preprints. 84th AMS Annual Meeting, Manuscript not available for publication. Boston, MA, American Meteorological Society, 2004.

Rink, T.; Whittaker, T., and Antonelli, P. Exploring GIFTS/HES and other hyperspectral data using Python, the VisAD component library, and remote data access. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004. Combined Preprints. 84th AMS Annual Meeting. Boston, MA, American Meteorological Society, 2004.

Rozoff, Christopher M.; Schubert, W. H.; McNoldy, B. D., and Kossin, J. P. Rapid filamentation zones in intense tropical cyclones. Conference on Hurricanes and Tropical Meteorology, 26th, Miami, FL, 3-7 May 2004 (preprints). Boston, MA, American Meteorological Society, 2004, pp443-444. Reprint #3981.

Santek, D.A.; Velden, C.; Key, J.; Daniels, J., and Bresky, W. Polar winds from MODIS: Algorithm and processing improvements. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004.

Santek, D.A., and Whittaker, T. The next generation of McIDAS: A melding of the past with the future. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004.

Scala, John R.; Hain, Christopher; MacKenzie, Wayne M. Jr., and Bachmeier, Scott. Meteorological conditions

associated with the rapid transport of Canadian wildfire products into the northeast during 5-8 July 2002. Symposium on Planning, Nowcasting, and Forecasting in the Urban Zone, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 3.4. Reprint #3657.

Schmidt, Christopher C. and Li, Jun. High resolution GOES sounder ozone estimates. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P8.4. Reprint #3809.

Schmidt, Christopher C.; Li, Jun, and Sun, Fengying. Simulation of and comparison between GIFTS, ABI, and GOES I-M Sounder ozone estimates and applications to HES. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.37. Reprint #3655 (FTIR).

Schmit, Timothy J.; Gurka, James; Menzel, W. Paul, and Gunshor, Mathew M. Introducing the next generation geostationary imager - GOES-R's Advanced Baseline Imager (ABI). Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P1.6. Reprint #3778.

Schmit, Timothy J.; Li, Jun; Gunshor, Mathew M.; Schmidt, Christopher C.; Menzel, W. P.; Gurka, James, and Sieglaff, Justin. Study of the Advanced Baseline Images (ABI) on the GOES-R and beyond. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 14.2. Reprint #3632.

Schmit, Timothy J.; Li, Jun; Gunshor, Mathew M.; Schmidt, Christopher C.; Menzel, W. Paul; Gurka, James, and Sieglaff, Justin. Geostationary imagers upgrades for 2015 timeframe. Report of the 32nd Meeting of the Coordination Group for Meteorological Satellites (CGMS XXXII), Sochi, Russian Federation, 17-20 May 2004. Darmstadt, Germany, European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), 2004, ppNOAA-WP-29. Reprint #4387.

Schmit, Timothy J.; Menzel, W. Paul; Daniels, Jaime; Ellrod, Gary; Nelson, James P. III; Jung, Jim, and Schreiner, Tony. 2003/2004 report on NOAA/NESDIS GOES soundings. Report of the 32nd Meeting of the Coordination Group for Meteorological Satellites (CGMS XXXII), Sochi, Russian Federation, 17-20 May 2004. Darmstadt, Germany, European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), 2004, ppNOAA-WP-27. Reprint #4385.

Schreiner, Anthony J.; Schmit, Timothy J.; Ellrod, Gary P., and Prata, Fred. Can upper-level SO2 be monitored using the GOES sounder? Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P4.7. Reprint #3792.

Smith, W. L.; Zhou, D. K.; Huang, H.-L.; Li, Jun; Liu, X., and Larar, A. M. Extraction of profile information from cloud contaminated radiances. ECMWF Workshop on Assimilation of High Spectral Resolution Sounders in NWP, Reading, UK, 28 June-1 July 2004. ECMWF Workshop Proceedings. Reading, UK, European Centre for Medium-range Weather Forecasts (ECMWF), 2004, pp145-154. Reprint #4153 (FTIR).

Smith, William L.; Revercomb, Hank E.; Bringham, Gail; Huang, Hung-Lung; Zhou, Daniel K.; Velden, Christopher S.; Miller, James B., and Emmitt, G. David. GIFTS - Hyperspectral imaging and sounding from geostationary orbit. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 14.6. Reprint #3634 (FTIR).

Staude, J.A.; Stearns, C.; Lazzara, M.; Keller, L., and Ackerman, S. An Antarctic cloud transport climatology overview. AMS Student Conference and Career Fair, Seattle, WA, 10-16 January 2004. Boston, MA, American

Meteorological Society, 2004.

Strabala, Kathleen I.; Gumley, Liam E.; Rink, Thomas; Huang, Hung-Lung; Davies, Jim; Weisz, Elisabeth; Baggett, K.; Friedman, S.; Manning, E., and Nguyen, Q. D. The International MODIS/AIRS Processing Package (IMAPP): TERRA and AQUA direct broadcast processing and applications. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P1.17. Reprint #3783.

Sun, Fengying; Li, Jun; Schmit, Timothy J., and Posselt, Derek. HES simulation study using cube data from MM5. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P1.37. Reprint #3636.

Szykman, James; White, John; Pierce, Brad; Al-Saadi, Jassim; Neil, Doreen; Kittaka, Chieko; Chu, Allen; Remer, Lorraine; Gumley, Liam, and Prins, Elaine. Utilizing MODIS satellite observations in near-real-time to improve AIRNow next day forecast of fine particulate matter, PM2.5. Conference on Atmospheric Chemistry, 6th: Air Quality in Megacities, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 1.2. Reprint #3630.

Tanamachi, R., and Feltz, W. Real time nowcating with the Atmospheric Emitted Radiance Interferometer (AERI). Fred Sanders Symposium, Seattle, WA, 10-16 January 2004. Boston, MA, American Meteorological Society, 2004.

Thomas, S.M.; Feltz, W.; Pavolonis, M.; Schreiner, A., and Santek, D. Satellite derived coud products for use in aviation safety applications. Conference on Aviation, Range and Aerospace Meteorology, Hyannis, MA, 3-8 October 2004. Boston, MA, American Meteorological Society, 2004.

Tobin, David C.; Revercomb, Henry E.; Moeller, Chris; Knuteson, Robert O.; Best, Fred A.; Smith, William L.; van Delst, Paul; LaPorte, Daniel D.; Ellington, Scott D.; Werner, Mark W.; Dedecker, Ralph G.; Garcia, Ray K.; Ciganovich, Nick N.; Howell, H. Benjamin; Dutcher, Steven, and Taylor, Joe K. Validation of Atmospheric InfraRed Sounder (AIRS) spectral radiances with the Scanning High-resolution Interferometer Sounder (S-HIS) aircraft instrument. Remote Sensing of Clouds and the Atmosphere IX, Maspalomas, Gran Canaria, Canary Islands, Spain, 13-16 September 2004. Bellingham, WA, Society of Photo-optical Instrumentation Engineers (SPIE), 2004, pp383-392. Reprint #3990 (FTIR).

Turner, D. D.; Knuteson, R. O.; Revercomb, H. E. ; Feltz, W. F., and Dedecker, R. G. Cloud microphysical properties retrieved from rapid-sample AERI data. Atmospheric Radiation Measurement (ARM) Science Team Meeting, 14th, Albuquerque, NM, 22-26 March 2004. Proceedings. Washington, DC, US Department of Energy, Office of Energy Research, Office of Health and Environmental Research, Environmental Sciences Division, 2004, ppPDF from website. Reprint #3919 (FTIR).

Velden, Chris; Kossin, James; Olander, Tim; Herndon, Derrick; Wimmers, Tony; Wacker, Robert; Brueske, Kurt; Kabat, Brian; Hawkins, Jeff; Edson, Roger, and DeMaria, Mark. Toward an objective satellite-based algorithm to provide real-time estimates of TC intensity using integrated multispectral (IR and MW) observations. Conference on Hurricanes and Tropical Meteorology, 26th, Miami, FL, 3-7 May 2004 (preprints). Boston, MA, American Meteorological Society, 2004, pp280-281. Reprint #3978.

Velden, Christopher; Dengel, Gail; Dengel, Russ; Huang, Allen Hung-Lung; Stettner, David; Revercomb, Hank, and Knuteson, Robert. Determination of wind vectors by tracking features on sequential moisture analyses derived from hyperspectral IR satellite soundings. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P1.10. Reprint #3780 (FTIR).

Velden, Christopher; Dengel, Gail; Huang, Allen Hung-Lung; Stettner, David; Revercomb, Hank, and Knuteson, Robert. Determination of wind vectors by tracking features on sequential moisture analyses derived

from hyperspectral IR satellite soundings. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P2.24. Reprint #3642 (FTIR).

Wacker, Robert S., and Velden, Christopher S. Correcting for precipitation scattering effects in satellite-based passive microwave tropical cyclone intensity estimates. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004.

Wacker, Robert S.; Velden, Christopher S., and Petty, Grant W. Toward a correction for precipitation scattering effects in satellite-based passive microwave tropical cyclone intensity estimation. Conference on Hurricanes and Tropical Meteorology, 26th, Miami, FL, 3-7 May 2004 (preprints). Boston, MA, American Meteorological Society, 2004, pp78-79. Reprint #3973.

Wang, Xuanji and Key, Jeffrey R. Satellite-derived Arctic climate characteristics and recent trends. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P6.28. Reprint #3803.

Wei, H.; Yang, P.; Li, J. ; Huang, H.L. ; Baum, B., and Sun, F. Study the microphysical and optical properties of cirrus clouds from Atmospheric Infrared Sounder (AIRS) measurements. Symposium on Integrated Observing and Assimilation Systems for Atmosphere, Oceans and Land Surface, Seattle, WA, 10-16 January 2004. Boston, MA, American Meteorological Society, 2004.

Whittaker, T.; Herring, D., and Simmon, R. The development of the Image Composite Editor (ICE) for the NASA Earth Observatory. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004.

Whittaker, Tom and Mostek, A. Collaborations, training and distance education from your desktop to the world: Using VISITVIEW. Symposium on Education, 13th, Seattle, WA, 11-15 January 2004 (preprints). Combined Preprints. 84th AMS Annual Meeting. Manuscript not available for publication. Boston, MA, American Meteorological Society, 2004.

Whittaker, T., and Rabin, B. StormTracker: A web-based tool for working with the automated tracking of thunderstorm clusters. International Conference on Interactive Information and Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, 20th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004.

Wimmers, A.J.; Schmidt, C.; Feltz, W., and Mecikalski, J. Satellite applications for detection of atmospheric turbulence related to tropopause folding. Conference on Aviation, Range, and Aerospace Meteorology, Hyannis, MA, 3-8 October 2004. Boston, MA, American Meteorological Society, 2004.

Wimmers, Anthony and Velden, Christopher. Enhancing satellite imagery through"morphing" transitions. Conference on Satellite Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 4.4. Reprint #3775.

Wimmers, Anthony and Velden, Christopher. Satellite-based center-fixing of tropical cyclones: New automated approaches. Conference on Hurricanes and Tropical Meteorology, 26th, Miami, FL, 3-7 May 2004 (preprints). Boston, MA, American Meteorological Society, 2004, pp82-83. Reprint #3974 .

Wylie, D. P.; Menzel, W. P.; Jackson, D., and Bates, J. Trends in high clouds over the past 25 years. Symposium on Global Change and Climate Variations, 15th, Seattle, WA, 11-15 January 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper 5.5. Reprint #3616.

Xiong, Xiaozhen; McMillin, Larry m.; Han, Yang; Kleespies, Thomas J., and van Delst, Paul. Recent improvements to the fast transmittance model, OPTRAN, for NOAA data assimilation. Conference on Satellite

Meteorology and Oceanography, 13th, Norfolk, VA, 20-23 September 2004 (preprints). Boston, MA, American Meteorological Society, 2004, ppPaper P3.4. Reprint #3787.

Yang, M., and Huang, H.-L. Precipitation processes associated with the landfalling Typhoon Nari. Conference on Hurricanes and Tropical Meteorology, 26th, Miami, FL, 2-7 May 2004. Boston, MA, American Meteorological Society, 2004.

Yang, P.; Mlynczak, M.; Wei, H.; Kratz, D.; Baum, B.; Hu, Y.; Wiscombe, W.; Heidinger, A., and Mishchenko. Potential advantages of using the far-infrared spectral signature for studying ice clouds. Symposium on Integrated Observing and Assimilation Systems for Atmospehre, Oceans, and Land Surface, Seattle, WA, 10-16 January 2004. Boston, MA, American Meteorological Society, 2004.

Other Publications

Best, Fred, Revercomb, Hank, Ellington, Scott, Werner, Mark, Adler, Doug, and Richards, Evan. GIFTS blackbody subsystem critical design review. Madison, WI, University of Wisconsin-Madison, Space Science and Engineering Center, 2004. various paging. (FTIR). (March 2004). UW SSEC Publication No.04.03.G1. (not on MADCAT).

Menzel, Paul, Ackerman, Steve, Baum, Bryan, Frey, Richard, Gumley, Liam, LaPorte, Dan, Li, Jun, Key, Jeff, Moeller, Chris, Seemann, Suzanne, Strabala, Kathy, Rink, Tom, and Zhang, Hong. Investigation of radiance calibration, cloud properties and atmospheric profiles with MODIS: Final report. NASA Contract NAS5-31367. [other reports for this contract are titled: Investigation of cloud properties and atmospheric profiles with MODIS]. Madison, WI, University of Wisconsin-Madison, CIMSS [Cooperative Institute for Meteorological Satellite Studies], 2004. 34p. (March 2004). UW SSEC Publication No.04.00.M1. (not on MADCAT).

Revercomb, Henry E., Ackerman, Steven, Knuteson, Robert O., Tobin, David C., Antonelli, Paolo, and Best, Fred A. Government study in support of a broad scope of NPOESS calibration and validation activities. Reporting period: September 27, 2001 through December 31, 2003. NPOESS/IPO Contract 50-SPNA-1-00039. Madison, WI, University of Wisconsin-Madison, Space Science and Engineering Center, 2004. 41p., appendixes. (March 2004). UW SSEC Publication No.04.03.R1. (not on MADCAT).

Schmit, Timothy J. Report on the NOAA Hyperspectral Workshop, 4th, Madison, WI, 17-19 August 2004. Madison, WI, University of Wisconsin-Madison, Space Science and Engineering Center, Cooperative Institute for Meteorological Satellite Studies (CIMSS), 2004. unpaged. 2 copies. UW SSEC Publication No.04.09.S1. (November 2004).